HYMN

K

TO THE
CREATOR of the World.

The THOUGHTS taken chiefly
from PSAL. civ.

To which is added in Proſe,

AN

IDEA of the CREATOR
FROM HIS
WORKS.

Te rerum Deus alme canam, dominumque, patremque,
Magne parens, ſancta quam majeſtate verendus
Ætheris æternas rector moliris habenas!
BUCHAN. *Pſ.* civ.

LONDON:
Printed, and Sold by M. COOPER, in *Pater-noſter-row*; and the Pamphlet Shops in *London* and
Weſtminſter. MDCCL.

BRITISH MUSEUM

TO

George Lyttelton, *Eſq*;

SIR,

YOU will probably be ſurprized at a public Addreſs from an anonymous Writer, whoſe Work you will have no Opportunity of ſeeing, till it be in print. The preſumption of this unexpected Dedication may perhaps be blamed: But the Propriety of deſiring the Countenance of a

Gentleman diſtinguiſhed for a pious and a charitable turn of Mind, as well as for a true poetical Genius, to a ſacred Poem, publiſhed on a charitable Account, is what hardly any one is likely to diſpute.

Flattery, the uſual Matter of Dedications, or even the moſt ſimple Detail of the Particulars of your Character, the Author thinks unfit for his Pen, as well as for your Ear. Therefore, after moſt humbly begging your Pardon for this Intruſion, and juſt mentioning, that this will be preſented you by thoſe who can certify you of the Truth of the Pretenſions in the following Advertiſement; there is nothing farther to be added by one, who is, and is likely to continue unknown to you, but to pray, that Heaven may bleſs you with Health and Happineſs in this World, and crown you hereafter with thoſe diſtinguiſhed Honours promiſed to ſuch as ſtand up for the Cauſe of Truth in theſe corrupt Times, when others ſtrive to outvie one another in diſcountenancing it.

That you will be ſo kind as to take in good part theſe ſincere and diſintereſted Wiſhes, is the Deſire and Hope of,

SIR,

Your moſt obedient

Moſt humble Servant,

The AUTHOR.

ADVERTISEMENT.

THE following Poem was the Amuſe-
ment of ſome leiſure Hours in the Coun-
try ſeveral Years ago. It was not origi-
nally intended for the Preſs; nor had
ver ſeen the Light, had it not been for ſome Friends
f the Author's, who, being deſirous to have it in
rint, and having often, in vain, requeſted his Con-
ſent, for that Purpoſe, at length prevailed by propoſ-
ng to him the publiſhing it for the Benefit of a very
miable Child, an Orphan. His Regard for the Fa-
mily, to which the Child belongs, and the ſlendereſt
Proſpect of having it in his Power to do a kind
Action with ſo little Trouble, were Conſiderations he
ould not reſiſt. It was therefore thought proper to
viſe and improve the Poem, and to add the Notes
and

and Treatiſe annexed, that the Whole might be ſomewhat the more worthy of the Public, and the more likely to turn to ſome Advantage to the Child. His Relations will think themſelves bound to return thoſe Acknowledgments, he is not at preſent capable properly to make, to the Promoters of the Sale of this Piece, who may conſider every Shilling ſo laid out, not as beſtowed merely for Entertainment, but as a Charity to a tender and helpleſs Innocent, whoſe Proſpect in Life has been one of the faireſt, though now changed for the worſe, and to whoſe amiable Appearance very few could refuſe ſuch a ſmall Gratuity, were he to preſent them the Books himſelf.

AN

HYMN, &c.

AWake, my Soul! with Joy thy God adore;
Declare his Greatneſs; celebrate his Pow'r;
Who, cloath'd with Honour, and with Glory crown'd,
Shines forth, and cheers his Univerſe around.
Who with a radiant Veil of heavenly Light
Himſelf conceals from all created Sight.
Who rais'd the ſpacious Firmament on high,
And ſpread the azure Curtain of the Sky.

PSAL. CIV.

er. 1. Bleſs the Lord, O my Soul! O Lord, my God,
u art very great, thou art clothed with Honour and Ma-
y.

. Who covereſt thy ſelf with Light as with a Garment;
o ſtretcheſt out the Heavens like a Curtain.

NOTES.

er. 2. *Who with a radiant Veil*, &c.] Some ingenious Writers
conſidered the Sun as one of the fitteſt Emblems of the ſupreme
g; though all created Glories muſt fall infinitely ſhort of the
tor of thoſe Glories. As the Sun appears to us unequalled in
ndor and Majeſty; as his Body is concealed by the Brightneſs
ſurrounds him; as he is removed from us at an inconceivable
ance; as he beholds all Things; and as he is the Soul and Life
ur Syſtem; in the ſame Manner, but in a Degree infinitely
er, may we conceive of the unequalled Majeſty of the One
eme.

id. *Himſelf conceals*, &c.] It is certain, that a Spirit abſolutely
, and free from all Manner of material or bodily Subſtance, as
out all Doubt the Divine Nature, and perhaps no other in the
erſe, is, muſt neceſſarily be inviſible, and not to be any Way
hended, but by abſtract Reaſon.

3 Whoſe awful Throne Heav'n's ſtarry Arch ſuſtains;
Whoſe Preſence not Heav'n's vaſt Expanſe reſtrains.
Whoſe Ways unſearchable no Eye can find,
The Clouds his Chariot, and his Wings the Wind.
4 Whom Hoſts of mighty Angels own their Lord,
And flaming Seraphim fulfil his Word.
5 Whoſe Pow'r of old the ſolid Earth did found,
Self-pois'd, ſelf-center'd, and with Strength girt round;
From her appointed Sphere forbid to fly,
Or ruſh unbalanc'd through the trackleſs Sky.
To reas'ning Man the ſov'reign Rule aſſign'd,
His Delegate o'er each inferior Kind;
Too ſoon to fall from that diſtinguiſh'd Place,
His Honours ſtain'd with Guilt and foul Diſgrace.
6 He ſaw the Pride of Earth's aſpiring Lord,
And in his Fury gave the dreadful Word:
Straight o'er her peopled Plains his Floods were pour'd,
And o'er her Mountains the proud Billows roar'd.

3. Who layeth the Beams of his Chambers in the Waters; who maketh the Clouds his Chariot; who walketh upon the Wings of the Wind.

4. Who maketh his Angels Spirits; his Miniſters a flaming Fire.

5. Who laid the Foundations of the Earth, that it ſhould not be moved for ever.

6. Thou coveredſt it with the Deep as with a Garment: the Waters ſtood above the Mountains.

Ver. 3. *Whoſe awful Throne*, &c.] Though the Eſſence of th ſupreme Being be neceſſarily inviſible, as has been ſaid, yet he ha thought it proper by a viſible Glory, to repreſent his immediat Preſence: And though he inhabits equally the whole Immenſity Space, yet he has thought fit to place the Throne of his Majeſty Heaven. See *Iſa*. lxvi. 1. "Thus ſaith the Lord, the Heaven "my Throne, and the Earth my Footſtool."

Ibid. *Whoſe Preſence*, &c.] "The Heaven and Heaven of He "vens cannot contain Thee." 1 *Kings* viii. 27.

Ibid. *Whoſe Ways unſearchable*, &c.] "How unſearchable "his Judgments, and his Ways paſt finding out. *Rom*. xi. 33.

Athwa

Athwart the Face of Earth the Deluge ſweeps,
And whelms the impious Nations in the Deeps.
7 Again God ſpake—and at his pow'rful Call
The raging Floods aſwage, the Waters fall,
The Tempeſts hear his Voice, and ſtraight obey,
And at his Thunder's Roar they haſte away:
8 From off the lofty Mountains they ſubſide,
And gently through the winding Vallies glide,
Till in the ſpacious Caverns of the Deep
They ſink together, and in Silence ſleep.
9 There he hath ſtretch'd abroad their liquid Plains,
And there Omnipotence their Rage reſtrains,
That Earth no more her Ruins may deplore,
And guilty Mortals dread their Wrath no more.
0 He bids the living Fountains burſt the Ground,
And bounteous ſpread their ſilver Streams around:
Down from the Hills they draw their ſhining Train,
Diffuſing Health and Beauty o'er the Plain.

7. At thy Rebuke they fled: at the Voice of thy Thun-er they haſted away.

8. They go up by the Mountains: they go down by the Vallies unto the Place which thou haſt founded for them.

9. Thou haſt ſet a Bound for them, that they may not aſs over: that they turn not again to cover the Earth.

10. He ſendeth the Springs into the Vallies, which run mong the Hills.

Ver. 9. *And there Omnipotence*, &c.] "Hitherto ſhalt thou come, but no farther; and here ſhall thy proud Waves be ſtayed." *Job* xxviii. 11.

Ibid. *That Earth no more*, &c.] "I ſet my Bow in the Clouds, and it ſhall be for a Token, *&c.*—and the Waters ſhall no more become a Flood to deſtroy all Fleſh." *Gen.* ix. 13—15.

Ver. 10. *Down from the Hills*, &c.] It is by moſt Authors greed, that the Hills are the Cauſe of Springs and the Origin of Rivers, by their attracting and condenſing the Vapours in the Air, y their raiſing up the Moiſture that is in the Earth, by Means of ttraction, and refining and filtrating it through their Pores, and by iving the Rivers a Fall or Declivity to enable them to run down nto the Vallies.

11 There the fair Flocks allay the Summer's Rage,
And panting Savages their Flame aſſwage.
12 On their ſweet winding Banks th' aerial Race
In artleſs Numbers warble forth his Praiſe,
Or chant the harmleſs Raptures of their Loves,
And cheer the Plains, and wake the vocal Groves.
13 Forth from his Treaſures in the Skies he pours
His precious Bleſſings in refreſhing Show'rs.
Each dying Plant with Joy new Life receives,
And thankful Nature ſmiles, and Earth revives.
14 The fruitful Fields with Verdure he beſpreads,
The Table of the Race that haunts the Meads,
And bids each Foreſt, and each flow'ry Plain
Send forth their native Phyſic for the Swain.
Thus doth the various Bounty of the Earth
Support each Species crowding into Birth.

11. They give Drink to every Beaſt of the Field: the wild Aſſes quench their Thirſt.

12. By them the Fowls of Heaven have their Habitation, which ſing among the Branches.

13. He watereth the Hills from his Chambers: the Earth is ſatisfied with the Fruit of thy Works.

14. He cauſeth the Graſs to grow for the Cattle, and Herb for the Service of Man: that he may bring forth Food out of the Earth.

Ver. 13. *Each dying Plant*, &c.] It is found by Experiments, That pure Water will nouriſh any Vegetable. For, ſetting a Plant, or Seed in a Pot, containing a known Quantity of Earth, and watering it conſtantly, after it is grown to a thouſand Times its original Weight, the Quantity of Earth is found by weighing it, not in the leaſt diminiſhed Therefore it is to the Moiſture taken in by the Roots and Leaves of Plants, Trees, and Grain, that we owe their Growth; ſo that, whatever we may think, a ſeaſonable Shower of Rain is more valuable to us than a Shower of Gold.

15 In purple Streams ſhe bids her Vintage flow,
And Olives on her Hills luxuriant grow,
One with its gen'rous Juice to cheer the Heart,
And one illuſtrious Beauty to impart;
And Bread of all Heav'n's precious Gifts the chief,
From deſolating Want the ſure Relief,
Which with new Life the feeble Limbs inſpires,
And all the Man with Health and Courage fires.
16 The cloud-topt Hills with waving Woods are crown'd,
Which wide extend their ſacred Shades around,
There *Lebanon*'s proud Cedars nod their Heads;
There *Baſhan*'s lofty Oaks extend their Shades:
17 The pointed Firs riſe tow'ring to the Clouds,
And Life and warbling Numbers fill the Woods.

15. And Wine, that maketh glad the Heart of Man, and Oil to make his Face to ſhine, and Bread, which ſtrengtheth Man's Heart.

16. The Trees of the Lord are full of Sap: the Cedars of *ebanon*, which he hath planted.

17. Where the Birds make their Neſts: as for the Stork, e Fir-trees are her Houſe.

Ver. 15. *One with its gen'rous Juice to cheer the Heart.*] Not to upify or bring Madneſs; which is a groſs Abuſe of the good Creare of God.

Ibid. *And Bread*, &c.] It is remarkable, that there is hardly a ation upon Earth, that does not uſe ſome Kind of Bread, wherethere are very conſiderable Parts of the World, in which no nd of Fleſh is eaten. The principal Property of Bread, which ders it ſo healthful, ſeems to be the ſtrong diſſolving Quality it ſeſſes, by which it tends ſo much to promote Digeſtion. Mr. *yle* extracted from a ſmall Quantity of Bread, a Liquor of ſo rroſive a Nature, that it in part diſſolved Corals, Blood-ſtones, other extremely hard Subſtances. There is no greater Inſtance of Divine Wiſdom in the Proviſion he has made for the Support of Lives of his Creatures, than appears in the Hardineſs of Wheat other Grain neceſſary to Life, which are made to ſtand almoſt Weathers, and to thrive with very little Culture. If Wheat and ley required as much Care to bring them forward, and were as cate as Apricots and Peaches, we muſt have a continued Famine,

18 Nor gentle Shades alone, nor verdant Plains,
Nor fair enamel'd Meads, nor flow'ry Lawns,
But e'en rude Rocks and dreary Deſarts yield
Retreats for the wild Wand'rers of the Field.
Thy Pow'r with Life and Senſe all Nature fills,
Each Element with varied Being ſwells,
Race after Race ariſing view the Light,
Then ſilent paſs away, and ſink in Night.
The Gift of Life thus boundleſsly beſtow'd,
Proclaims th' exhauſtleſs Hand, the Hand of God.
19 Nor leſs thy Glory in th' etherial Spheres,
Nor leſs thy ruling Providence appears.
There from on high the gentle Moon by Night
In ſolemn Silence ſheds her ſilver Light,

18. The high Hills are a Refuge for the Wild-goats, and the Rocks for the Coneys.

19. He appointeth the Moon for Seaſons: the Sun knoweth his going down.

Ver. 18. *Each Element*, &c.] There is hardly any Subſtance in Nature, that is not the Habitation and Receptacle of ſome one or more Species of living Creatures. Every different Plant nouriſhes its proper Family of Inſects. All Kinds of Subſtances when turned to a State of Corruption, ſwarm with Life. The Air is plainly an inexhauſtible Store of Eggs, or Stamina of Animalcules of different Kinds: For one cannot ſet in the Sun-beams for any conſiderable Time, a little Paſte, Infuſion of Pepper, Hay, Flowers, Leaves, or almoſt any vegetable Subſtance, but it ſhall be impregnated with Thouſands and Millions of Animalcules imperceptible without a Microſcope; all of different Forms, Sizes, and Manners of Life, and all completely and elegantly formed in all their Parts.

Ibid. *Then ſilent paſs away*, &c.] To Beings, who have no Deſire or Proſpect of Immortality, a Privation of Exiſtence is no Hardſhip as on the Contrary, to ſuppoſe our Species, with the pleaſing Hop of an everlaſting State hereafter, which is inſeparable from ou Nature, not to have been deſigned for Immortality, would b giving a very indifferent Repreſentation of the Wiſdom and Goodneſs of Him, who implanted in our Minds thoſe Hopes and Deſire

An

And thence the glorious Sun pours forth his Beams,
Thence copious ſpreads around his quick'ning Streams.
Each various Orb enjoys the golden Day,
And Worlds of Life hang on his chearful Ray.
20 Thus Light and Darkneſs their fix'd Courſe maintain,
And ſtill the kind Viciſſitudes remain:
For when pale Night her ſable Curtain ſpreads,
And wraps all Nature in her awful Shades,
Soft Slumbers gently ſeal each mortal Eye,
Stretch'd at their Eaſe the weary Lab'rers lie.
The reſtleſs Soul 'midſt Life's vain Tumults toſt,
Forgets her Woes, and ev'ry Care is loſt.
Then from their Dens the rav'nous Monſters creep,
Whilſt in their Folds the harmleſs Beſtial ſleep.

20 Thou makeſt Darkneſs, and it is Night, wherein all he Beaſts of the Foreſt do creep forth.

Ver. 19. *Thence copious ſpreads*, &c.] It has been computed what umber of Particles of Light a Candle ſends out every Inſtant of ime, to be viſible through every Point of a Space two Miles around , or four Miles in Diameter; and the Number is many millions of illions of Times greater than that of the Grains of Sand contained in he whole Earth, which is a Globe of twenty five thouſand Miles ound. What then muſt be the Number of Particles or Globules f Light, that have been diffuſed through a Space of many thouſand illions of Miles around that immenſe Ocean of Light the Sun, uring many Thouſands of Years backward?

Ver. 20. ——— *Life's vain Tumults*, &c.] The Cares and the oys of Life are equally vain, being equally uncertain and ſhort-ved. To what Purpoſe is one tranſported at any temporal Hapineſs, of the Continuance of which he is utterly uncertain while e poſſeſſes it, and which he knows at beſt he can enjoy but a few ears? And why ſhould any one be dejected at the Arrival of any isfortune, ſince he knows not how ſoon he may get clear of it, nd is ſure his Diſtreſs muſt be over in a few Years at worſt.

21 The furious Lion roams in queſt of Prey,
To gorge his Hunger till the Dawn of Day;
His hideous Roar with Terror ſhakes the Wood,
As from his Maker's Hand he aſks his Food.
22 Again the Sun his Morning Beams diſplays,
And fires the eaſtern Mountains with his Rays.
Before him fly the Horrors of the Night;
He looks upon the World—and all is Light.
Then the lone Wand'rers of the dreary Waſte
Affrighted to their holds return in Haſte,
23 To Man give up the World, his native Reign,
Who then reſumes his Pow'r, and rules the Plain.
24 How various are thy Works, Creator wiſe!
How to the Sight Beauties on Beauties riſe!
Where Goodneſs worthy of a God beſtows
His Gifts on all, and without Bounds o'erflows;
Where Wiſdom bright appears, and Pow'r divine,
And where Infinitude itſelf doth ſhine;

21. The young Lions roar after their Prey, and ſeek their Meat from God.

22. The Sun ariſeth: they gather themſelves together, and lay them down in their Dens.

23. Man goeth forth to his Work, and to his Labour until the Evening.

24. O Lord, how manifold are thy Works! in Wiſdom haſt thou made them all: the Earth is full of thy Riches.

Ver. 21. *His hideous Roar*, &c.] The Lion's Manner of hunting his Prey (according to Naturaliſts) is this. Having no great Sagacity of Smell, he ſets up a terrible Roar in the Night at his firſt coming out, then purſues them by the Ear, till he catches them.

Ver. 24. *And where Infinitude*, &c.] Though it ſhould be affirmed, that all created Things are in Reality and Strictneſs finite and bounded; yet when compared to ſuch Imaginations as ours, or perhaps thoſe of the higheſt Archangel in Heaven, they may be called Infinite: For what Conceptions are to be formed by a finite Mind of the Number of living Creatures throughout the Univerſe, of the Num-

Where Excellence inviſible's expreſt,
And in his glorious Works the God appears confeſt.
5 With Life thy Hand hath ſtock'd this earthly
Plain,
Nor leſs the ſpacious Empire of the Main.
6 There the tall Ships the rolling Billows ſweep,
And bound triumphant o'er th' unfathom'd Deep.
There great Leviathan in regal Pride,
The ſcaly Nations crouding by his Side,
Far in the dark Receſſes of the Main
O'er Nature's Waſtes extends his boundleſs Reign.
Round the dark Bottoms of the Mountains roves,
The hoary Deep ſwells dreadful as he moves.
Now views the awful Throne of antient Night,
Then mounts exulting to the Realms of Light;
Now launches to the Deep, now ſtems the Shore,
An Ocean ſcarce contains the wild Uproar.
Whate'er of Life repleniſhes the Flood,
Or walks the Earth, or warbles thro' the Wood,

5. So is this great and wide Sea, wherein are Things
ping innumerable, both ſmall and great Beaſts.
6. There go the Ships; there is that Leviathan, whom
u haſt made to play therein.
7. Theſe wait all upon thee: that thou mayſt give them
r Meat in due Seaſon.

nd Minuteneſs of the Particles which compoſe the Parts of their
es; of the Globules of the Blood, to which a Grain of Sand is
ountain; of thoſe of Light, probably ſtill as much ſmaller than
Globules of the Blood; of the Immenſity of the Creation,
of the Number of Atoms or Particles of Matter which com-
the ſtupendous Whole; all which are numbered before God;
are probably beyond the Comprehenſion of all created Beings.
id. *Where Excellence inviſible*, &c.] "The inviſible Things (or
ttributes) of God are clearly ſeen, being underſtood by the
hings that are made, *even* his eternal Power and Godhead."
i. 20.

In Nature's various Wants to thee complains,
28 The Hand, which gave the Life, the Life ſuſtains.
To each th' appointed Suſtenance beſtows,
To each the noxious and the healthful ſhows.
Thou ſpread'ſt thy Bounty — meagre Famine flies:
29 Thou hid'ſt thy Face — their vital Vigor dies.
30 Thy pow'rful Word again reſtores their Breath;
Renew'd Creation triumphs over Death.
31 Th' Almighty o'er his Works caſts down his Eye,
And views their various Excellence with Joy:
His Works with rev'rence own his pow'rful Hand,
And humble Nature waits his dread Command.
32 He looks upon the Earth—her Pillars ſhake,
And from her Centre her Foundations quake.
The Hills he touches—Clouds of Smoke ariſe,
And ſulph'rous Steams mount heavy to the Skies.
33 Whilſt Life informs this Frame, that Life ſhall be
(O Firſt and Greateſt!) ſacred all to Thee.
Thy Praiſe my Morning Song, my daily Theme,
My ev'ning Subject, and my Midnight Dream;

28. That thou giveſt them, they gather: thou openeſt thine Hand, they are filled with Good.

29. Thou hideſt thy Face, they are troubled: Thou takeſt away their Breath: they die, and return to their Duſt.

30. Thou ſendeſt forth thy Spirit: they are created, and thou reneweſt the Face of the Earth.

31. The Glory of the Lord ſhall endure for ever. The Lord ſhall rejoice in his Works.

32. He looketh on the Earth, and it trembleth: he toucheth the Hills, and they ſmoke.

33. I will ſing unto the Lord as long as I live: I will praiſe him whilſt I have my Being.

34 When Grief oppreſſes, and when Pain aſſails ;
When all the Man, and all the Stoic fails ;
When fierce Tentation's ſtormy Billows roll ;
When Guilt and Horror overwhelm my Soul ;
With outward Ills contending Paſſions join'd,
To ſhake frail Virtue, and unhinge the Mind ;
When Nature ſinks ; when Death's dark Shades ariſe,
And this World's Glories vaniſh from theſe Eyes ;
Then may the Thought of Thee be ever near,
To calm the Tumult, and compoſe the Fear.
In all my Woes thy Favour my Defence ;
Safe in thy Mercy, not my Innocence.
And through what future Scenes thy Hand may guide
My wond'ring Soul, and thro' what States untry'd,
What diſtant Seats ſoe'er I may explore,
When frail Mortality ſhall be no more ;

34. My Meditation of him ſhall be ſweet : I will be glad in the Lord.

Ver. 34.——*all the Stoic*, &c.] Alluding to the antient Sect of Philoſophy called Stoiciſm, whoſe diſtinguiſhing Doctrine was, That a Man ought never to ſuffer himſelf to be in the leaſt moved with any Thing that happened to him. But the Behaviour of the Philoſophers themſelves ſhewed the Inſufficiency of their chimerical Doctrine to ſupport the Mind in real Diſtreſs.

Ibid. *When Guilt and Horror*, &c.] The Thought in this and ſome of the following Lines, goes upon a very different Scheme from that of the Heathen Philoſophers and Poets, who talk like Dreamers of the triumphant Confidence with which Virtue inſpires the Good Man, ſufficient to ſupport him not only in Danger and Death ; but even in the midſt of a ruining World : as if there were ſuch a Thing as a good or innocent Man. Revelation gives us very different Notions of our Character and State before God. We are by it told, that we have all ſinned and come ſhort of our Duty ; that there is none good but one, that is, God ; that the Heavens are not pure in his Sight, and that he charges his Angels with Folly. And, if the beſt of us examines ſtrictly his own Heart and Life, he muſt own it to be an awful and ſtartling Proſpect to look forward to that important Change of State, which is to tranſmit him to the Tribunal of an all-ſeeing Judge.

If ought of meek or contrite in thy Sight
Shall fit me for the Realms of Bliſs and Light,
Be this the Bliſs of all my future Days,
To view thy Glories, and to ſing thy Praiſe.
35 When the dread Hour, ordain'd of old, ſhall come,
Which brings on ſtubborn Guilt its righteous Doom,
When Storms of Fire on Sinners ſhall be pour'd,
And all th' Obdurate in thy Wrath devour'd;
May I then hope to find a lowly Place
To ſtand the meaneſt of th' etherial Race;
Swift at thy Word to wing the liquid Sky,
And on thy humbleſt meſſages to fly.
Howe'er thy bliſsful Sight may raiſe my Soul,
While vaſt Eternity's long Ages roll,

35. Let the Sinners be conſumed out of the Earth, and let the Wicked be no more. Bleſs thou the Lord, O my Soul. Hallelujah.

Ib. *If ought of meek or contrite*, &c.] If an offending Order of Being are at all to be received into the Favour of the Supreme, it is plain Humility and Penitence for their Faults muſt be Qualifications indiſpenſably neceſſary, as the moſt merciful Sovereign that ever ca be, will hardly think it proper to receive his rebellious Subjec into favour, ſo long as they continue rebellious.

Ver. 35. ——*ſtubborn Guilt*, &c.] The Goodneſs of God is ſuch that he has declared it is only the obſtinately Wicked that are incapable of Pardon.

Ib. *Howe'er thy bliſsful Sight*, &c.] As the Converſation of Characters illuſtrious for Wiſdom and Virtue have a natural Tendency t form thoſe who have the Happineſs of enjoying it, to a Likeneſs o ſuch Characters, ſo muſt the Converſation of Angels and juſt Me made perfect, and above all the beatific Viſion of the Divin Glory in Heaven, improve and exalt the Powers and Faculties of th Bleſſed, and raiſe them to higher and higher Degrees of Perfectio to all Eternity. Thus 1 *John* iii. 2. "We ſhall be like him; fo "we ſhall ſee him as he is." So that the pious Soul, which a preſent mourns under innumerable Miſeries and Infirmities, will o day triumph amidſt Angels and Archangels, and reſemble them i Glory; according to our Saviour's own Words, *Luke* xx. 36.—"th "ſhall be like to the Angels. And if we allow an Eternity for t

Perfection on Perfection tow'ring high,
Glory on Glory rais'd, and Joy on Joy,
Each Pow'r improving in the bright'ning Mind,
To humble Virtues, lofty Knowledge join'd;
Be this my higheſt Aim, howe'er I ſoar,
Before thy Footſtool proſtrate to adore,
My brighteſt Crown before thy Feet to lay,
My Pride to ſerve, my Glory to obey.

bleſſed Spirits to improve in, and take into the Conſideration the Advantages they may probably have for Improvement, as new Senſes or Inlets of Knowledge, and other Methods of receiving and communicating Ideas, to us at preſent inconceivable, to what amazing Lengths may not this carry them? Let us only ſuppoſe the Sagacity of a *Newton* joined to the Memory of a *Clarke*, and all Opportunities of Improvement given to the Perſon we ſuppoſe bleſt with theſe two Faculties in the higheſt Degree, beſides an endleſs, undiſturbed and uninterrupted Duration, for purſuing Knowledge, and then form ſome Idea of the Exaltation ſuch a Genius muſt arrive at in ſuch a Length of Time. But farther, let us conſider the Difference between the State of a Perſon born deaf and blind, and of one who enjoys thoſe Senſes in perfection, and from the immenſe Advantages the one has above the other, endeavour to form ſome Conception of the Advantage one or two additional Senſes or Methods of Perception may give thoſe glorified Beings hereafter. But, if we were to ſuppoſe a human or angelic Spirit to advance in Improvements at ever ſo great a Rate, and the Improvements of ſuch a Spirit to advance with a Rapidity accelerated in a tenfold or hundredfold Proportion to all Eternity, yet after Millions and Myriads of Ages, the Diſtance between the Perfections of the moſt exalted Creature, which will ſtill be bounded and limited, and thoſe of the Divine Nature, which are out of all Bounds, will ſtill be infinite; ſo that it will ever be the higheſt Honour of the moſt glorious Creature in the Univerſe to worſhip, to ſerve, and obey the one Supreme.

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IDEA of the CREATOR,

From His WORKS.

BOTH Reaſon and Revelation agree in this grand and intereſting Truth, That the final Happineſs of all rational Beings muſt conſiſt in their having ſuch Notions of the Supreme, as will effectually engage them to obey his Will, and thereby gain his Favour, upon which all depends. Accordingly we are told by our Saviour, *John* xvii. 3. "That it is Life eternal to know the only true "God." Without conceiving juſtly and worthily of the ſupreme Governor of the World, we are not likely to honour him as God. And though a well-meant Zeal may carry an honeſt but weak Mind conſiderable Lengths; yet it is plain, that neither our Devotions nor our Obedience can be ſo acceptable to God, if they proceed from any Thing elſe than the Conſideration of his being truly worthy of them, and having a Right to them.

There are but two Ways, by which we have any Manifeſtations of the Object of Worſhip, I mean, his Works of Creation, and the Revelations he has been pleaſed to make of himſelf. And whoever endeavours to ſet either of theſe in a clear or engaging Light, ſo as they may have their due Influence upon Men, may be ſaid, at leaſt, to aim at what is commendable. The Wonders of Creation have been celebrated by innumerable Writers antient and modern. And the Subject being inexhauſtible, there needs not much Apology for the following Thoughts, any more than for the foregoing Poem. Their Brieſneſs may ſuit ſome Readers, and the mere Novelty of the Piece may chance to engage ſome others. And it is to be hoped none will be the worſe for the peruſal of them.

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The Attributes, which appear the moſt conſpicuous in the Works of God, are his Wiſdom, Goodneſs, and Power. And theſe three Perfections of the Divine Nature meet our View in every Object we behold. To perceive the diſtinct Marks and Characters of the Divine Wiſdom, Goodneſs, and Power, we need only to lift up our Eyes to the Heavens, to bend our Sight downward to the Earth, or to look inward upon ourſelves. The firſt living Creature we meet, or even the firſt Plant or Flower we caſt our Eyes upon, ſhews the Hand that formed it to have been ſet to work by inconceivable Goodneſs, to have been guided by infinite Wiſdom, and endowed with Almighty Power.

That a Being neceſſarily poſſeſſed of infinite Perfection, and conſequently of an infinite Degree of Happineſs from himſelf independently, ſhould exert his Power in producing innumerable Multitudes of Creatures, and Worlds for their convenient Habitation, with all Accommodations proper for making them happy; could proceed from nothing but the immenſe and unbounded Overflowings of his inconceivable Goodneſs. For, as to the Notion of his creating the Univerſe and its Inhabitants with a View to his own Glory, or the Praiſes of his Creatures, alas! what is the Praiſe of any Number of finite, dependent, and imperfect Beings (for ſuch are all but the Supreme only) before the infinite God, in whoſe Sight the whole created Univerſe with all its Inhabitants, is but as a few Atoms floating in the Sun-beams. The Extenſiveneſs of the Divine Goodneſs appears in that he hath condeſcended, from the Exaltation of his infinite Perfection, to provide a ſuitable Meaſure or Degree of Happineſs for every Order of his Creatures, from the higheſt Archangel to the meaneſt Reptile. To ſhew the Truth of this Obſervation fully, it would be neceſſary to take a particular View of the various States and Conditions of every Order of Beings in the Univerſe, and by what we ſee in this Part of it which we inhabit, we have Reaſon to conclude, we ſhould find throughout the whole (allowing for the Miſeries Vice and Irregularity have brought into the World, by which it muſt come to paſs, that innocent Creatures muſt often ſuffer by their Connection with the Guilty) we have Reaſon, I ſay, to conclude, we ſhould find throughout the Univerſe a Happineſs allotted for every Order of Beings ſuitable to their reſpective Rank and Capacity; as a Number of Veſſels of different Sizes and Capacities may all be full, tho' they may contain very different Quantities. Even in the preſent diſorderly State of Things, though it is plain the Earth groans under the Load of the Curſe brought upon it by the Guilt of its Inhabitants, we ſee that the inferior Creatures live, in the main, happ and thoughtleſs either of paſt or future Miſeries, till a ſudden and unforeſeen Stroke carries them off. And as for our Species, we muſt own, that by far the greateſt Part of the Unhappineſs we ſuffer, is owing to our own bad Conduct, or to the ill Uſage of others; and the Remainder, to our being Part of a guilty offending Race of Creatures, who have drawn down the Divine Diſpleaſure upon our Species, and the World we inhabit. And yet even in this Life there are many Comforts and Enjoyments to be had, if we will reſolve to follow the Dictates of Reaſon, and obey the Precepts of our Religion. But in future States, we are informed by Revelation, that the Heart of Man cannot conceive the Happineſs prepared for the Wiſe and Virtuous.

O Goodneſs Infinite! Goodneſs immenſe!
That all this Good of Evil hath produc'd. MILTON.

In treating upon the Subject of the Divine Wiſdom which appears in the Works of Creation, I ſhall only bring a few Inſtances of it, without pretending to enlarge on them. As, Firſt, it may be obſerved, that the greateſt Effects in Nature are produced by the moſt ſimple Cauſes. Vegetation, for example, or the Growth of all manner of Plants, from the ſmalleſt Pile of Graſs to the largeſt Oak, with that of all Kinds of Fruits, Herbs, Roots, Grains, and medicinal Plants, is brought about by the ſame ſimple and uniform Cauſe, *viz.* A Principle or Virtue of Attraction, with which all bodily Subſtances are endowed, whereby the ſmall Tubes or Pipes, of an infinite Number of which every Vegetable is compoſed, draw in the fluid Nouriſhment by degrees, which enlarges their Size, and being matured and concocted by the Heat of the Sun, brings them to Perfection. That there is ſuch a Principle or Virtue in Nature, appears by the Experiment of ſmall Glaſs Tubes or Pipes, one End of which being immerſed in any high coloured Liquor, the Fluid never fails viſibly to aſcend to a conſiderable Height. The Beating of the Heart and Circulation of the Blood in Man, and all other Creatures, may, in the ſame manner, be in all Reaſon aſcribed to ſome one general and ſimple Cauſe, whether that is the Weight of the Atmoſphere, or whatever elſe. Sir *Iſaac Newton* has made it plain, to the full Conviction of all, but thoſe who do not underſtand his Demonſtrations, that it is by one ſimple and uniform Cauſe, that a Stone or other heavy Body falls to the Ground, and that the Moon, and all the Planets and Comets are kept in their Orbits, and made to revolve round their Centres, as in the Sequel is more fully explained. It is alſo known, that the whole Variety of the Seaſons is owing to the moſt ſimple and ſeemingly obvious Contrivance imaginable, *viz.* The Inclination of the Earth's Axis to the Plane of the Ecliptic, as is ſhewn afterwards. What a Number of important Effects are owing to a little Warmth, and depend upon the Earth's being ſituated preciſely at ſuch a Diſtance from the Sun, as is ſuitable to the State of its Inhabitants? Every Reader may purſue this Thought in his own Mind, and will find the Truth of the Obſervation univerſally throughout all Nature.

Another general Remark, that may be made on the Works of Creation, ſetting forth the Divine Wiſdom which ppears in them, may be, That there is not one Part or Member of the immenſe Whole, that does not ſerve to ſeveral different Purpoſes at the ſame Time, and anſwer each of its various Ends as fully as if it had been intended only for that one. We may conſider in this Light every Species of the brute Creation, which, without doubt, were made to enjoy a certain Portion of Happineſs, and alſo to ſerve either for our Nouriſhment, for the Culture of our Lands, for our Clothing, for Food to other Creatures, which were deſtined for our Nouriſhment, or for our Puniſhment, and as Inſtruments of Reproof and Correction for our Irregularities. In his manner likewiſe we may conſider the Air, which not only anſwers the End of Reſpiration, but ſerves, at the ſame ime, for the Conveyance of the winged Race, for Naviga-ion, for raiſing Clouds and Vapours, from whence Dew and Rain, ſo abſolutely neceſſary for Vegetation, for clearing the Earth of noxious or peſtilential Vapours, by means of the Winds; for refracting or bending the Rays of the Sun, by which means we enjoy his Light both before he is riſen, and fter he is ſet, and to which we owe the grateful morning nd evening Twilights; for working ſeveral Machines, as Windmills, and ſuch like; for being the Vehicle of all man-er of Sound, and for producing the nobleſt Effects by Muſic Organs and by other Inſtruments; for the Vegetation all manner of Plants, to which Experiments ſhew it to be ſolutely neceſſary, and various other important Purpoſes. the ſame manner we may alſo conſider every other ele-entary Part of Nature, and we ſhall find that the moſt minute

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nute Object we can caſt our Eyes or fix our Thoughts upon, is made to anſwer more Purpoſes than one.

If an ingenious Mechanic makes a Machine that ſhall meaſure Time to a great Degree of Exactneſs, he is admired, and very juſtly, for the Nicety of his Work, and its Fitneſs to anſwer the ſingle End he intended it for. Nor is it expected, that an aſtronomical Clock ſhould at the ſame Time anſwer the End of an Air-pump, a Windmill, and a Fire-engine. On the contrary, every one knows, that the more complicated any Machine of human Invention is, the more different Movements there are in a Clock, for example, it will be the leſs exact and perfect. It is far otherwiſe in the Divine Contrivances, where we ſee one Cauſe bring about innumerable different Effects, and all as regularly and properly, as if each ſeveral Cauſe had been appointed for one ſingle Purpoſe.

Another general Obſervation on the Wiſdom, which appears in the Divine Works, may be, that through the whole an aſtoniſhing Variety joined with the moſt regular Uniformity appears. Uniformity amidſt Variety is the very Idea of Beauty or Perfection. Which two Properties ſeem, as it were, to outvie one another throughout all Nature, ſo far as our Reſearches extend. If we conſider either the animal or vegetable World, the Inhabitants of the Land, or of the Waters, the minute or the great Bodies in Nature, in every reſpective Species, the Variety how extenſive, yet the Uniformity how cloſe! The Difference between the ſpreading Oak, or towering Cedar, and the humble Shrub, how great! Yet the Reſemblance how near! No two Trees, or Plants of different Species, but what differ eſſentially; nor even any two of the ſame Species to be found exactly alike: Yet all formed on the ſame general Plan; all proceeding from Seeds; all vegetating in the ſame manner, and from the ſame Principle. How many Millions of theſe Animalcula which Microſcopes ſhew in Vinegar, in Pepper-water, and in Infuſion of almoſt all Kinds of vegetable Subſtances, and indeed throughout Air, Earth and Water, would go to the Weigh of an Elephant or Whale? Yet an Animalcule of a Siz ſmall enough for a Grain of Sand to ſmother ten thoſand o them, as ſome are known to be, has a Body, a Head, wit Eyes, and a Mouth, and probably a Brain and Heart, bu without doubt Veins and Arteries, with a Fluid circulating i them, with Nerves, Muſcles, Tendons, and moſt of th other Parts of the largeſt Animals. How different the Elements of Air and Water, ſo that the Inhabitants of the on cannot, generally ſpeaking, ſubſiſt in the other! Yet theſe Elements agree in moſt of their Properties, being both Fluids, and having both of them all the neceſſary Properties of Fluids. How different the Manner of Life of the Inhabitants of the Land and Water! Yet how nearly allied to one another in the Anatomy of their Bodies, and in their Senſes. How endleſly various the Properties and Effects of different material Subſtances. How ſeemingly different a Lump of Lead from a Piece of Cork; an Ingot of Gold of a Foot in Length, and half an Inch in Thickneſs, capable (as is found by Experience) of being drawn to a Wire long enough to reach from *London* to *York*, or one hundred and fifty Miles; how different, I ſay, this ductile Metal from the Rock or Sand of the Mine in which it is found. How different that Wonder of Nature, the Loadſtone, from a common Pebble. Quickſilver is capable, by one chemical Operation or other, of being turned into almoſt any Colour or Conſiſtence; in one State it is a noble Medicine, in another a deadly Poiſon; and after it has been forced by Fire into an hundred different States, the original running Mercury may be recovered. An Author writing of the Mineral called Antimony, ſays, The Life of Man is too ſhort to make all the Experiments with it, and to ſee all the Changes it is capable of, and the various Effects that may be produced by and upon it. A little Rainwater ſtrained through the Veſſels of a Vine forms the Root, the Wood, the Bark, the Pith, the Leaves, the Bloom, and the Fruit; all different in their Qualities, outward Appearances and Effects, yet all to be reckoned under the one general Claſs of vegetable Subſtances. The Fruit alone, before it is ripe, yields Verjuice, a Liquor quite different from all other vinous ones; and when ripe, and dried in the Sun, affords by Diſtillation a fetid Oil, and a hot Spirit; if the Grapes be dried and boiled, they make a ſweet Liquor, which being diſtilled, yields an Oil and Spirit much like thoſe of Raiſins; the Juice of the Grapes ſqueezed out and fermented becomes firſt a ſweet and turbid Liquor, called Muſt, which is quite different in Nature and Effects from Wine; this Liquor by Degrees becomes leſs ſweet and clear, and is at laſt matured into Wine; which, by Diſtillation, affords an inflammable Spirit. It will alſo in Cryſtallization ſhoot into Salts, and yield a great Proportion of a Liquor as ſweet as Honey. Beſides the Wine itſelf, the fermented Juice of Grapes affords Dregs or Lees, and Tartar; which laſt may be analyſed into five different Subſtances, all leſs acid than the Tartar itſelf. Wine likewiſe degenerates into Vinegar, from which may be obtained by Fire a Spirit, and a Salt different from thoſe of Tartar. Thus does the ſame original Matter, *viz.* a little Puddle-water, ſhew itſelf in almoſt thirty different States in this one Plant. But Naturaliſts ſhew, that Salts, acid, alkaline, volatile, and lixiviate; Spirits, vinous, urinous, and acid, Oils of all Kinds, Sulphurs of all Kinds, and even Mercury, may be produced out of almoſt all kinds of Subſtances. Amidſt all this endleſs Variety, it is certain, that all material Subſtances agree in the general Properties of Extenſion, Gravity, and Impenetrability. Farther, if we conſider in this Light the whole ſolar Syſtem, no two Planets are to be found, whoſe Periods, Magnitudes, Velocities, Diſtances, or Planes are the ſame; yet all agree in being of nearly a round Figure, and in being carried round their Centres nearly in Circles, with Velocities in a certain exact Proportion to their Diſtances. The fixed Stars, are in all Probability, very different from one another in Magnitude, in their Revolutions round their own Axes, and other Circumſtances; but they all agree in being luminous Bodies; and if Aſtronomers are right in ſuppoſing them all to be Suns with their reſpective Syſtems of Planets going round them (of which more afterwards) the Inhabitants of thoſe Planets, however they may differ from one another, may yet be ſuppoſed with Probability all to agree in one Circumſtance, that is, of being univerſally Creatures endowed with the Senſe of Sight; elſe to what Purpoſe are they furniſhed with ſuch a Profuſion of Luminaries?

The very Definition of Wiſdom is, the chooſing the fitteſt Means to accompliſh the greateſt Ends. The grand End the Supreme Being had in view was the Happineſs of innumerable rational and ſenſitive Creatures, than which a greater or more important one cannot be conceived. And that the Divine Wiſdom has choſen in every Inſtance the very beſt, or rather only Means fit for anſwering each reſpective End, and even a Variety of Ends by one and the ſame Means, i not only demonſtrable *à priori* from the infinite Wiſdom o God, but is likewiſe found by Experience and Obſervation, as far as our Enquiries go; and the more deeply we ſearc into his admirable Works, the more of deep Contrivance an Deſign we find, and the more of the Fitneſs of every ſevera Cauſe to produce its Effects.

The Greatneſs of that Power, which has been exerted i the Creation, though every Object in Nature ſhews it, wi beſt appear by conſidering a little the GREAT Works, pro perly ſo called, of Nature; the Sun, and Planets, and th

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fixed Stars. The Sun and Moon, the moſt conſpicuous to us of all the celeſtial Bodies, are the only ones mentioned in the ſacred Text:* But the Invention of that nobleſt of Inſtruments the Teleſcope, and the Sagacity of the Aſtronomers of later Ages, whoſe Obſervations have improved and corrected thoſe of the foregoing, afford us a very different Idea of the Solar Syſtem, from what the ſingle Conſideration of thoſe two moſt conſpicuous Bodies gives us. As this Piece may probably fall into the Hands of ſome, who have not Leiſure or Opportunities of reading Books of Aſtronomy, the following brief View of our Syſtem, and of the Immenſity of the Creation, according to the Theory of the Moderns, may not be unacceptable.

It is proper, in the firſt Place, juſt to mention, That the real Magnitudes, Diſtances, Orbits, and other Affections of the Bodies of our Syſtem are determined by what Aſtronomers call their Parallaxes, and by their Elongations from the Sun, and their apparent Magnitudes, and other analogical Methods, which would take up by far too much Time to explain here; by which it is poſſible to determine their Magnitudes and Diſtances, when thoſe Diſtances are not too great to yield a Parallax. Aſtronomers, for example, know certainly the Diſtance of the Moon from the Earth, *viz.* 240 thouſand Miles, becauſe the Moon yields a very ſenſible Parallax; and they know, that the Sun's Diſtance from the Earth is very probably, at leaſt, ten thouſand Times the Diameter or Thickneſs of the Earth, which is about eight thouſand Miles, and brings the whole Diſtance to about eighty millions of Miles. It is, I ſay, hardly to be doubted, that the Diſtance from the Sun to the Earth is, at leaſt, eighty millions of Miles; but it is not certainly known, whether it is not a great deal more. In the Year 1761, the Diſtance of all the Planets from the Sun will be determined to a great Degree of Exactneſs by Obſervations on a Tranſit of the Planet *Venus* over the Face of the Sun, which is to happen the 6th of *May*, in that Year. But, according to the preſent Theory, the Sun, to appear of the Magnitude he does to our Eyes at the Diſtance of eighty millions of Miles, muſt be a Body a great many hundred thouſand Times larger than the Earth, ſo that if his Centre were placed where that of the Earth is, his outward Surface would extend one hundred and forty thouſand Miles higher than the Orbit of the Moon, his Diameter or Thickneſs being ſeven hundred and ſixty thouſand Miles, whereas that of the Earth is but about eight thouſand. This amazing World of Fire turns once round in about twenty five Days. This is known by a Number of duſky Spots, which appear upon the Sun's Face, ſo as to be ſeen ſometimes with the naked Eye, when he ſhines through a thin Cloud or Miſt; but are always obſervable with the Help of a Teleſcope, with a dark Glaſs for the Security of the Eye. Theſe Spots could not be viſible at the Diſtance of the Sun, if they were not as large as the whole Earth; but ſuch of them as appear of a conſiderable Breadth, as they often do, muſt be ſtill vaſtly larger. They never continue long to make the ſame Appearance; but are always riſing and vaniſhing again. They are moſt probably Exhalations floating in the Sun's Atmoſphere at ſome Diſtance from his Body.

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* Verſe 19th of the Pſalm.

This glorious Luminary, the Centre of our Syſtem, has ſix opaque Globes, commonly called the Planets, going round him at different Diſtances, and in different Periods, but all from Weſt to Eaſt, as follows.

1. *Mercury*, a Body conſiderably inferior in Size to the Earth, performs his Courſe in about three Months, which is his Year, at the Diſtance of thirty millions of Miles from the Sun. The Heat of the Sun in *Mercury* (if there be no Proviſion made for mitigating it) muſt be ſuch, as if it were the ſame on the Earth, would keep all the Waters upon it conſtantly boiling: And the Brightneſs of the Sun's Light muſt be ſuch as would be quite intolerable to Eyes like ours. But it does not follow, that *Mercury* is therefore uninhabitable; ſince it can be no Difficulty for the Divine Power and Wiſdom to accommodate the Inhabitants to the Place they are to inhabit; as the Cold we ſee Frogs and Fiſhes bear very well, would ſoon deprive any of our Species of Life. To an Eye ſuch as ours, the Sun, ſeen from this Planet, would appear ſeven times as large as he does to us. He is always ſo near the Sun, that we have no Opportunity of diſcovering whether he turns round upon his own axis, or not, and conſequently cannot determine what Length the Days and Nights in *Mercury* are. He is ſeen ſometimes with Teleſcopes horned like the Moon, and ſometimes like a Half-moon, but never fully illuminated, becauſe that Side of the Planet, on which the Sun ſhines, is never turned full towards us, except when he is ſo near the Sun, as to be loſt in the Brightneſs of his Beams. His enlightened Side is always towards the Sun, which ſhews, that he only ſhines with the borrowed Light of the Sun. That this Planet revolves round the Sun in an Orbit nearer to him, than that of the Earth, is plain, becauſe he is never ſeen oppoſite to the Sun, but always in the Weſt, when he is ſeen at Sun-ſetting, and in the Eaſt, when he is ſeen at Sun-riſing;

and that never beyond the Diſtance of twenty eight Degrees from the Sun (a Degree is about twice the apparent Breadth of the Moon.) The ſame Conſiderations prove, that the next Planet, *viz.*

2. *Venus* revolves round the Sun in an Orbit including that of *Mercury* within it. For ſhe is always ſeen in the Neighbourhood of the Sun, and never appears in the Weſt when the Sun is in the Eaſt, nor contrariwiſe; nor ever removes above forty eight Degrees from him. When ſhe is on one Side of her Orbit, ſhe is our Morning, and on the other our Evening Star. This Planet turns round upon its own Axis in twenty three Hours, as the Earth does in twenty four. *Venus* performs her annual Revolution round the Sun in two hundred twenty four Days, at the Diſtance of about fifty nine millions of Miles from the Sun. She is nearly of the Size of the Earth. She appears through a Teleſcope exactly as the Moon does to the naked Eye, partly enlightened, and partly dark, and with the ſame Inequalities on her Face as on that of the Moon. Some Aſtronomers fancy they have ſeen a Satellite or Moon near *Venus*, like that belonging to the Earth: But it is not yet certain whether they have deceived themſelves or not.

3. The Earth, which we inhabit, poſſeſſes the next Place in the Solar Syſtem, and, at the Diſtance of about eighty millions of Miles, as above, performs her yearly Revolution round the Sun in about three hundred ſixty five Days, and at the ſame time, as a Bowl upon a Bowling-green not only proceeds forward, but likewiſe turns round upon its own Axis, ſo does the Earth turn once round upon its Axis as it goes along, every twenty four Hours. It is aſtoniſhing, and even frightful to think, that this vaſt and cumbrous Globe of Earth and Sea, which is almoſt twenty five thouſand Miles in Circumference, has received ſuch an Impulſe from the Almighty Arm, as has carried it conſtantly for above theſe five thouſand Years, that we know of, round the Sun at the Rate of at leaſt fifty thouſand Miles every Hour, which it muſt abſolutely do, to go round the Sun in a Year at the Diſtance of eighty millions of Miles from him. So that, if an Angel were to come from ſome other World, and to place himſelf near the Earth's Way, he would ſee it paſs by him with a Swiftneſs to which that of a Cannon Ball is but as one to one hundred, and would be left behind by it no leſs than the above Number of Miles in the Space of one Hour. There is no more Reaſon to doubt, that the Earth goes in this Manner round the Sun, than there would be for a Paſ-

ſenger in a Ship on ſmooth Water, who ſaw the Objects upon Land continually paſſing by, to doubt whether the Veſſel he was in, or the Shore, was in motion. We ſee the Sun continually changes his Place with reſpect to the fixed Stars, and muſt own it to be highly improbable that this Change of Place is owing to any Change in the whole Heavens, which, conſidering the Diſtance of the ſtarry Heavens, would require a Motion infinitely more rapid than that above aſcribed to the Earth. As for the common Objection againſt the Earth's Motion, that we are not ſenſible of it, and that a Stone thrown up from the Earth ought not to fall down upon the ſame Place again; it is anſwered at once by the above Compariſon of a Ship, from which (as has been often found by Experiment) a Ball fired directly up in the Air, does not fall behind the Ship, let her Motion be ever ſo ſwift, but, partaking of the Ship's Motion, is carried forward in the Air, and falls down again upon the Deck. And as to the Objections taken from ſome Scripture Expreſſions, which ſeem to contradict the Theory of the Earth's Motion, it is plain, from innumerable Inſtances, that Revelation was not given to Mankind to make them Philoſophers or deep Reaſoners, but to improve them in Virtue and Piety; and that it was therefore proper it ſhould be expreſſed in a manner accommodated to common Capacities and popular Opinions in all Points merely ſpeculative, and which were not to have any direct Influence upon the Hearts and Lives of Men. The Truth of the Matter is, that the Demonſtrations given by the incomparable Sir *Iſaac Newton*, have eſtabliſhed the Doctrine of the Motion of the Earth and other Planets and the Comets round the Sun, and of the ſecondary Planets or Satellites round their Primaries, in ſuch a manner, as leaves no Room for any, but ſuch as do not underſtand them, to heſitate about it. The Sun's apparent Riſing and Setting is therefore owing to the Earth's turning round upon its own Axis; and his apparent Change of Place among the fixed Stars, to our real Change of Situation round the Sun. The different Seaſons of the Year, with all their delightful Varieties, are owing to the moſt ſimple Contrivance that can be imagined, *viz.* The Inclination of the Earth's Axis to the Plane of the Ecliptic. Any Perſon who has not an Opportunity of ſeeing an Orrery, may eaſily repreſent this by an Apple or any other round Body with a Wire thruſt through the Middle of it, and carried round a Table having a Candle placed on the Middle; if the lower End of the Wire be made to touch the Table all the way round, and to lean a little, the upper End ſtill pointing towards the ſame Side of the Room, by turning the Skewer round, as it is carried along, it will be eaſy to underſtand how the Earth's Turning once round upon her own Axis, makes a Day and a Night; and by carrying the Apple round the Table, it will be eaſy to ſhew how the Sun (repreſented by the Candle) muſt ſeem to change Place with regard to the fixed Stars; and by obſerving how differently the Light of the Candle enlightens the different Parts of the Apple as the Wire points toward it, or from it, the Cauſe of the Difference of the Seaſons, of the Length of the Days and Nights, of the Sun's Shining more directly or more obliquely upon different Parts of the Earth, and of the Heat of Summer and cold of Winter, may be made plain to any Capacity. That the Earth is of a round, or nearly round Figure, is plain from the Shadow it caſts upon the Face of the Moon in a partial Eclipſe of the Moon, which is always round, and never of any other Figure. It is alſo manifeſt from what is always obſerved at Sea, *viz.* That a Ship, as it approaches, firſt ſhews its Maſts and Sails, and by Degrees its lower Parts, till it becomes all viſible; and, as it goes off, its Hulk is firſt loſt, and then its Sails and upper Parts, till it be quite hid by the Convexity or Roundneſs of the Surface of the Ocean.

As the Earth is carried round the Sun once in a Year, ſo is the Moon carried round the Earth once in about twenty ſeven Days, accompanying her in her whole Revolution, at the above mentioned Diſtance of two hundred and forty thouſand Miles, and keeping always the ſame Face towards the Earth. That the Moon goes round the Earth, as her Centre, is evident to the Eye. For, when ſhe is between the Sun and the Earth, ſhe is inviſible to us, her dark Side being turned toward us. When ſhe goes a little way forward in her Revolution, ſo as to come from between us and the Sun, we ſee a ſmall Part of her Body enlightned, and ſo on ſtill more and more, till ſhe comes to be in Oppoſition to the Sun, and then we ſee all that Side of her which the Sun ſhines upon, when we ſay ſhe is full; though the Sun does not, in Reality, enlighten any more of her Body at full than at new Moon; only her enlightened Side is turned towards us in the one Caſe, and from us in the other. This whole Matter may be made very plain to any Capacity in the ſame Manner as is above directed with regard to the Earth's Revolution round the Sun, by carrying a ſmaller Apple or Ball to repreſent the Moon round the firſt, which repreſents the Earth, and obſerving how the Light of the Candle ſhining upon the little Ball muſt appear to a Fly or other Inſect placed upon the large one. Whenever the Moon happens to come exactly between the Earth and the Sun, ſhe ſtops the Light of the Sun, and then we ſay, the Sun is eclipſed; and according as the Moon happens to cover a Part or the Whole of the Sun's Face, we call the Eclipſe partial or total. Sometimes a total Eclipſe of the Sun happens when the Moon is at her greateſt Diſtance from the Earth (for ſhe does not go round the Earth in an exact Circle, as neither do any of the reſt of the primary or ſecondary Planets round their Centres) and then, as all Objects appear ſmaller according to their Diſtance, ſhe does not cover the whole Face of the Sun, but a Part of his Body is ſeen round the Moon like a ſhining Ring. But, if the Moon happens to come between the Earth and Sun, when ſhe is at her leaſt Diſtance from the Earth, ſhe appears then ſo large as to cover the whole Face of the Sun, and makes, for ſome Minutes, a Darkneſs equal to that of Twilight. When the Earth comes exactly between the Sun and the Moon, ſhe darkens a Part or the Whole of the Moon's Face, and makes an Eclipſe of the Moon. The Earth being a Body about thirty or forty Times larger than the Moon, caſts a Shadow large enough to eclipſe the Moon, if her Diameter were three Times greater than it is, whereas the Shadow of the Moon can never eclipſe the whole Face of the Earth together. If the Moon revolved round the Earth in the ſame Plane as the Earth goes round the Sun, there would be conſtantly an Eclipſe of the Sun every new, and of the Moon every full Moon. But to prevent this Inconvenience, the Author of Nature has ordered Matters ſo, that the Courſe of the Moon round the Earth is ſometimes above and ſometimes below that of the Earth round the Sun, ſo that their Shadows generally miſs one another. Theſe Motions are ſo exactly regulated, that Aſtronomers can foretel Eclipſes to Minutes at an hundred Years Diſtance, than which there is not a more remarkable Inſtance either of human Sagacity, or of the Truth of that Expreſſion of Scripture, "That the Works of God are all made in Number, Weight, "and Meaſure." It is certain, by Obſervations made with good Teleſcopes, that, though the Face of the Moon is covered with innumerable Inequalities like the Mountains upon the Earth, there is no great Collection of Waters upon it, like our Oceans; nor is there any Reaſon, from her Appearance through thoſe Inſtruments, to ſuppoſe ſhe has any ſuch Appendage belonging to her as our Atmoſphere of Air. If the Moon is inhabited (as ſhe may for any Thing we know) thoſe who live on one Side or Hemiſphere never can ſee our World, and thoſe who live on the other can never loſe Sight of it, except when the Earth comes between them and the Sun, as ſhe keeps always one Side turned towards us. Thoſe who live about the middle Parts of the Hemiſphere that looks toward the Earth, muſt ſee it always directly over their Heads with much the ſame Appearances as the Moon makes to us, ſometimes horned, ſometimes half, and ſometimes wholly illuminated, but of a vaſtly greater Bulk than the Moon appears to us. It ſeems highly probable, that the Attraction of the Moon acting more ſtrongly upon the fluid than the ſolid Parts of our Terraqueous Globe is the Cauſe of our Tides, as they anſwer ſo exactly to her Motions, and Diſtances from us, and other Circumſtances. To enter upon that Theory, however, would be beſide my preſent Purpoſe.

4. *Mars* is the fourth primary Planet in the Solar Syſtem; for the Moon is properly to be termed a Satellit, or ſecondary Planet, as reſpecting the Earth, and not the Sun, for her Centre. He revolves round the Sun in the Space of near two Years, at the Diſtance of about one hundred and twenty millions of Miles. His Bulk is reckoned to be much inferior to that of the Earth. It is by the Parallax of this Planet, that the beſt Eſtimate has yet been made of the true Diſtance of the Sun from the Earth and other Planets. He turns round his own Axis in very nearly the ſame Time as the Earth, as is evident by the Spots ſeen on his Face with Teleſcopes. It has not yet been diſcovered, whether this Planet has any Satellit or Moon belonging to him or not. That his Orbit is without that of the Earth, and conſequently that he revolves round the Sun at a greater Diſtance than the Earth, is evident from his being often ſeen in the Side of the Heavens oppoſite to the Sun. He is ſometimes ſeen through Teleſcopes as the Moon appears in her third Quarter, part of his dark Side being then turned toward us, which ſhews that his Light is borrowed from the Sun. This Planet appears always with a troubled ruddy Light, from whence, and from the Appearance of the fixed Stars near his Body, Aſtronomers conjecture that he is ſurrounded with a very groſs Atmoſphere, and that the Apearance of Belts or *Faſciæ* upon his Face are Ranges of Clouds, which probably keep always nearly the ſame Place round his Body, as his Axis is nearly perpendicular to the Plane of his Orbit. If there are any Inhabitants in *Mars*, they can never ſee *Mercury*, but when he paſſes over the Face of the Sun. They will ſee *Venus* ſometimes extreamly near the Sun, as we ſometimes ſee *Mercury*. The

Earth and Moon will appear to them, through Teleſcopes, if they have any ſuch Inſtruments, like two Moons, a larger and a ſmaller, ſometimes horned, ſometimes half or three Quarters illuminated, but never full, and always changing Place with regard to one another. And the above mentioned two hundred and forty thouſand Miles, the Diſtance between the Earth and Moon, will to their naked Eyes (if their Sight be like ours) be ſhrunk into a Space no greater than 15 Minutes of a Degree, or half the Breadth of the Moon, as ſhe appers to our naked Eyes. The Earth and Moon muſt appear in *Mars* ſometimes much larger than at others, as *Mars* does to us, the Diſtance between us being in one Part of our Revolution five or ſix Times leſs than in the Oppoſite.

5. *Jupiter* revolves round the Sun in the Space of about twelve Years, and round his own Axis in a little leſs than ten Hours; ſo that his Year is as long as twelve of ours, and his Day and Night not quite ten Hours long. That his Orbit is without the Earth's, is plain from his being ſeen in Oppoſition to the Sun, and always with a full illuminated Face. His diurnal Revolution is very viſible through a Teleſcope by means of a remarkable Spot upon his Face. His Diſtance from the Sun is ſuppoſed to be about four hundred, and conſequently from us above three hundred millions of Miles. To appear to us ſo conſpicuous as he does at ſuch a Diſtance, he muſt be many hundred Times bigger than the Earth. *Jupiter* has no leſs than four Moons revolving round him in the following Periods, *viz.* The neareſt in almoſt two Days, at the Diſtance of near three Times the Diameter or Thickneſs of *Jupiter's* Body, which, according to the Calculations of Aſtronomers, comes to nearly the Diſtance of the Moon from the Earth. To the Inhabitants of this firſt Moon, if there are any, *Jupiter* muſt appear as our Earth to the Inhabitants of our Moon, if ſuch there be; only he will appear to them large enough to cover twenty Degrees, or a ninth Part of their whole Heavens. The ſecond Satellit revolves round *Jupiter* in about three Days and an half, at the Diſtance of about three hundred and ſixty thouſand Miles. The third, in about a Week, at the Diſtance of about five hundred and eighty thouſand Miles. The fourth and outermoſt, performs its Revolution in a little above ſixteen Days and an half, at the Diſtance of about two millions of Miles.

It is probable, that the Shades or Belts ſeen upon *Jupiter's* Face are, as well as thoſe of *Mars*, no other than Ranges of Clouds or Vapours hanging in his Atmoſphere. It is by the Eclipſes of *Jupiter*'s Moons that Aſtronomers have made one of their nobleſt Diſcoveries, *viz.* That Light is propagated in a certain Time from the Sun, and reaches the Planets ſooner or later, according to their reſpective Diſtances. It is certain, that the Revolutions of all *Jupiter*'s Satellites are, in Reality, ſo equable, that any careful Obſerver may exactly foretel the Minute when any one of them is to be hid behind the Body of *Jupiter*, or to paſs between us and his Body. But when the Earth is in that Part of her Orbit which is fartheſt from *Jupiter*, it is always found, that thoſe Eclipſes happen conſiderably later than the true Time of Occultation, which can only be occaſioned by the Light's taking ſo many Minutes more in its Paſſage from *Jupiter* to the Earth at her fartheſt than at her neareſt Diſtance. By comparing our Diſtance from *Jupiter* with that from the Sun, and calculating from thence, Aſtronomers have found that Light is about ſeven Minutes in its Paſſage from the Sun to the Earth, being after the Rate of above ten millions of Miles in one Minute, or about fifty or ſixty thouſand Miles in the Space in which one can pronounce the Word Light. A Cannon Ball, continuing its Motion at the ſame Rate as that with which it flies the firſt Second of Time after its Eruption from the Mouth of the Cannon, would ſpend about twenty five Years in coming from the Sun to us; and a Body, that moved with the Swiftneſs of a Horſe or a Ship would take up innumerable Ages in paſſing through ſuch a Space. It is by the Difference of the Time of ſeeing the Eclipſes of *Jupiter*'s Moons in different Parts of the World, that the Longitude of Places, or their Diſtances to the Eaſt or Weſt of the Meridian of *London* or any other Place, is beſt determined.

6. The ſixth and outermoſt of the primary Planets is *Saturn*; he revolves round the Sun in the Space of almoſt thirty Years, at the Diſtance of about eight hundred millions of Miles. His great Diſtance from us has hitherto prevented Aſtronomers from obſerving his Revolution on his own Axis. To make the Appearance he does to us, at the Diſtance of above ſeven hundred millions of Miles, he muſt be ſeveral hundreds of Times larger than the Earth, though his Magnitude is ſuppoſed to be much inferior to that of *Jupiter*. There is belonging to this Planet the moſt extraordinary and unaccountable Phænomenon in Nature, *viz.* A huge bright Circle, or Ring, ſurrounding his Body, ſuppoſed, by the Appearance it makes to us, to be no leſs than twenty thouſand Miles broad, and about as many from the Body of the Planet. Whether this amazing Appearance has been occa-

ſioned by any Diſruption of the Body of the Planet, as our Earth has been by ſome ſuppoſed to have been reduced to her preſent ſhattered Condition by the Deluge; or whether this Ring has been deſigned by the Author of Nature as an original Appendage of the Planet, to encreaſe their Light, which, according to our Notions, muſt be very neceſſary at the Diſtance of *Saturn*; which of theſe, I ſay, or whether either of them is the Caſe, is not yet known. To the Inhabitants of *Saturn*, if there are any, this Ring muſt appear to be in the Heavens, and not to belong to the Planet itſelf. *Saturn* has no leſs than five Moons, very diſtinctly viſible through a good Teleſcope, revolving round him. The firſt revolves in almoſt two Days, at the Diſtance of above one hundred and twenty thouſand Miles from *Saturn*'s Centre. The ſecond in almoſt three Days, at the Diſtance of about three hundred thouſand Miles. The third performs his Revolution in four Days and a half, at much the ſame Diſtance from *Saturn*'s Centre as the Diſtance between the Earth and Moon. The fourth revolves in ſixteen Days, and is diſtant from *Saturn* about five hundred and forty thouſand Miles. The fifth and outermoſt, takes up ſeventy nine Days and an half in his Revolution, and is ſuppoſed to be above one million and an half of Miles diſtan from *Saturn*. To ſuppoſe that the Author of Nature had any View to us, when he created theſe ſecondary Planets of Moons, and gave them their Revolutions round *Jupiter* and *Saturn*; to imagine that he intended thoſe vaſt Bodies (fo ſome of thoſe Moons cannot be ſuppoſed to be leſs than the Earth we inhabit) for any Benefit or Advantage to us, which he knew ſhould never be ſeen by any but a few Aſtronomer peeping through Teleſcopes; to imagine, I ſay, that the Divine Wiſdom ſhould contrive Things ſo ill, is as much to his Honour, as if we ſhould ſuppoſe he had placed a Sun and planetary Syſtem within the Globe of the Earth, and intended it for our Uſe. But, to return, if there are Inhabitant in *Saturn*, which I know no Reaſon we have to doubt, thei five Moons muſt not only be of vaſt Uſe in increaſing thei Light, which at that Diſtance can never, at mid Day, be ſ bright as our Twilight, but muſt likewiſe afford them grea Entertainment in obſerving them as they riſe, ſometimes altogether, ſometimes ſeparately, and as they eclipſe one another in their Revolutions. The Sun muſt appear to the Inhabitants of *Saturn*, if their Eyes are like ours, one hundred times leſs than it does to us, or about twice as big as the Planet *Venus* does to our naked Eyes, when ſhe is at the Brightest. Therefore the warmeſt Region in this Planet muſt,

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there be no Proviſion for qualifying it, be colder than it is in *Greenland*. So that if the Earth were removed to the Diſtance of *Saturn*, all the Fluids upon it muſt be turned into Ice, as under the Poles, without a Poſſibility of ever returning to their fluid State, but by the Force of Fire. Neither *Mercury*, *Venus*, the Earth, the Moon, nor *Mars* can be ſeen at the Diſtance of *Saturn* by ſuch Eyes as ours, unaſſiſted by Inſtruments.

It may be juſt proper to mention, before I conclude this brief Account of the planetary Syſtem, that the direct, ſta-ionary, and retrograde Motions of the ſuperior Planets, *viz.* *Mars*, *Jupiter* and *Saturn*, that is, their appearing to us ſometimes to go forward, from Weſt to Eaſt, ſometimes to ſtand ſtill, and ſometimes to go backward from Eaſt to Weſt, s the Conſequence, and the Proof of their and our revolving ound the Sun all in one Direction, *viz.* from Weſt to Eaſt, ut in different Periods and at different Diſtances, as may be nade plain to the meaneſt Capacity by an Orrery.

The Appearances abovementioned as viſible only by the Help of a Teleſcope, with thoſe which follow, reſpecting he fixed Stars, may be ſeen by any one who uſes good nſtruments of that kind. Thoſe I have uſed are made by Mr. *Short*, in *Surry-ſtreet* in the *Strand*; who has made one he longeſt of the reflecting Kind, that was ever brought o Perfection, being twelve Feet in focal Length, which agnifies an Object twelve hundred Times, ſo that it ſhews e Moon, whoſe Diſtance from us, as has been ſaid, is two undred and forty thouſand Miles, as it would appear to e naked Eye, at the Diſtance of two hundred.

Beſides the ſix primary Planets, which revolve round the un in the Periods, and at the Diſtances above mentioned, d the ten Secondaries or Moons, one of which revolves und the Earth, four round *Jupiter*, and five round *Saturn*, above deſcribed; beſides theſe, I ſay, modern Aſtronomy ews, that there are a great many other ſtupendous Bodies, lled Comets, to be conſidered as Part of the Solar Syſtem; r that thoſe Bodies actually revolve round the Sun, ough in Orbits ſo very elliptical or oval, that they are ver viſible to us, but when they are in that Part of their volution which is neareſt the Sun. That the Comets great Bodies like the Planets, and that their Diſtance is yond that of the Moon, and that they are not Meteors gene-ed in the Air, is demonſtrable by their Parallaxes. And t they, or ſome of them at leaſt, regard the Sun as their ntre, though their Diſtance from him in different Parts of their Courſes is very different, is plain from Obſervatio made on that Part of their Orbit which is within our View, from whence Aſtronomers calculate the whole. The Courſes of the Comets are very different from thoſe of the Planets; for, whereas all the Planets, both primary and ſecondary, revolve round their Centres from Weſt to Eaſt, and all nearly in the ſame Plane, on the contrary, the Comets come from all Points of the Compaſs, and from all Parts of the Heavens, toward the Sun, and after turning round his Body, as a Racer turns the Goal, go off again in the ſame manner toward all Part of the Heavens, and run out into the infinite Expanſe, ſom of them a great way beyond the Orbit of *Saturn*. But ther is one general Regulation, which the Creator of the Univerſ has eſtabliſhed for all the revolving Bodies of our Syſtem, *viz* That according as they are nearer or farther from their Centres, their Motion is quicker or ſlower, and that in an exa Proportion. Accordingly the Comets, though the moſt ſeem ingly irregular of any of the Bodies in our Syſtem, obſerv this Rule ſtrictly; ſo that, as a Comet draws nearer to th Sun, it is always obſerved to accelerate its Motion, and t ſlacken its Pace, as it goes off from him. The incompa able Sir *Iſaac Newton* has ſhewn, that it is by one and th ſame Principle, that a Stone let drop from the Top of a Tow falls toward the Earth with a Motion continually accelerate that the Moon is kept always in the Neighbourhood of t Earth, inſtead of being carried off into infinite Space by t Impulſe, commonly called the projectile Force, which ca ſes her Revolution; that the Planets are kept in their Orb round the Sun; and that the Comets are attracted toward t Sun, keeping in a Path or Courſe not direct toward his Centr but angular, as a Racer going toward the Goal he is to tu round, and ſtill ſwifter and ſwifter, according as they approa more and more near to him (which enables them to go rou him, without ſhocking againſt his Body) and that they off ſlower and ſlower, as they move farther and farther fr him, till at laſt, the Force, which carries them round, comes almoſt inſenſible, and then the Sun, whoſe Attracti reaches to an immenſe Diſtance every way round him, gins again by ſlow Degrees to draw them back towards h in their reſpective Paths or Orbits, and ſo their Revolution continued. Sir *Iſaac* has given the Name of Attraction this Virtue or Force which keeps all the revolving Bodie our Syſtem in their Orbits, though he does not pretend account for its Cauſe, otherwiſe than by aſcribing it to the Cauſe of all, *viz*. The ſupreme Being acting in and upon

Machine of the World, by the Means or Interpoſition, perhaps, of ſome immenſely ſubtile and elaſtic Element. As for the Force, which carries the Planets and Comets round their Centres, and which would carry them out into infinite Space, if the Attraction from the Centre did not prevent it, it is only to be accounted for in the ſame manner, by aſcribing it to the Divine Power. It is by the ballancing and proportioning of theſe two Forces, called the centripetal and centrifugal, that the whole Machine of the World performs its Motions. This may be made very plain by fixing to the Middle of a large Table the End of a ſmall Cord, to the other End of which is faſtned a Clew or Ball. Throw the Ball rom you, toward the Centre, but not directly, and you will ſee it revolve round the central Pin or Nail, which faſtens the End of the Cord to the Table. Here the Cord (which keeps he Ball from flying off) repreſents the centripetal Force or Virtue, which keeps the Planets in their Orbits, and the Force ou give the Ball, when you throw it from you, repreſents he centrifugal Force, or Impulſe given the Planet by the lmighty Hand (for the Earth or any other Planet is but a ery diminutive Ball in the Hand of God) which carries it on n its Revolution. And if you could make the Cord lengthen nd ſhorten regularly, and the Ball go round conſtantly the wifter according as the Cord ſhortned, and contrariwiſe, ou would have an exact Repreſentation of the Courſe of a omet. That there is ſuch a Thing as Attraction, or a endency in all material Subſtances to approach nearer and earer to one another, which Attraction is ſtronger or weaker a certain exact Proportion to the Diſtance, may be made vident to the Sight, by placing afloat in the Middle of a road Veſſel of Water a Number of ſmall Pieces of Cork, Vood, or any other Subſtance, which, though they be put ſome ſmall Diſtance from one another, will always come gether in a little Time, and if one be larger than the others will ſhew that its attractive Virtue is proportionably ſtronger, bringing all the ſmall ones to itſelf, and by drawing them ong with it, if you move it. If there are any Inhabitants the Comets, they muſt live a Life wholly inconceivable to . The Comet of 1680, for example, when it was neareſt e Sun, on *December* the 8th, was expoſed to a Heat almoſt irty thouſand times greater than the greateſt we have at the ropics. No earthly Subſtance could have born ſuch a Heat thout not only being melted, but even being diſſipated or rned into Glaſs. The Sun, ſeen from the Body of the omet, if we can ſuppoſe there was there any Eye to ſee it muſt appear one hundred and twenty Degrees in Diameter; ſo that it would ſeem large enough to cover almoſt the whole Heavens, than which a more tremendous Sight cannot be conceived; and at its fartheſt Diſtance the Sun muſt be ſo diminiſhed as to appear but a little brighter and larger than the Star called *Sirius*, or the Dog-ſtar, does to us. For Aſtronomers ſuppoſe that Comet, at its fartheſt Diſtance from the Sun, to go off three or four Times the Diſtance of *Saturn*, and that its Period or Time of going its Courſe is five hundred and ſeventy five Years. That of another, they ſuppoſe to be one hundred and twenty five Years; and of another, which according to them, may be expected to appear in 1758, to be ſeventy five Years. Beſides theſe, Aſtronomers think they have Reaſon to reckon eighteen others belonging to our Syſtem: but they do not pretend to put the Theory of Comets upon the ſame Footing as that of the Planets. The Comets differ very much in Appearance one from another, and all from the Planets, in that they all look duſky and gloomy, as if ſurrounded with a very groſs Atmoſphere, and project behind them, that is, toward the Part of the Heavens that is oppoſite to the Sun, a Stream of Miſt or Vapour, commonly called their Tails. It is moſt likely, that the Tai of a Comet is only its Atmoſphere rarified to a great Degre by the extreme Heat of the Sun, on its Approach to him for it is always obſerved, that the Tail becomes longer as th Comet approaches nearer to the Sun, and contrariwiſe. Th Tail of the Comet, which appeared in 1680, extended itſel over no leſs than ſixty Degrees, or a third Part of our whol Heavens from Eaſt to Weſt. To make ſuch an Appearanc at the Diſtance that Comet was ſuppoſed to be at, the Ta muſt have been many millions of Miles in Length. Whether theſe tremendous Bodies, which the Almighty has ſe a traverſing in this fearful manner through the vaſt Expanſe be Worlds formerly inhabited, and now reduced to a Chao with their wicked Inhabitants left in them in a State of Puniſhment; or whether they are future Worlds, not yet reduce to an habitable State; or whether they are vaſt Maſſes combuſtible Matter made to paſs periodically round the Su and after a Number of Revolutions, approaching every Ti nearer and nearer, as it is ſuppoſed ſome of them do, are laſt to drop into the Sun, as an Addition of Fewel to ma up for his immenſe and continual Waſte of Light and Hea or whether they are intended to impregnate from Time Time the Regions of the Planets with a Quantity of ſaluta Particles to make up for the Decay or Waſte of thoſe nece

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ſary Principles; or whether they are formed to bring about Deluges or Conflagrations, and ſo prove the Inſtruments of the Divine Vengeance upon his offending Creatures; whether any of theſe, I ſay, be the Deſign for which infinite Wiſdom formed theſe amazing Bodies, and let them looſe to wander through the Sky, is above human Underſtanding to determine. It is plain, that the Shock of a Body, of the Size of a Comet, againſt the Earth or any of the Planets moving with the Rapidity they have in their Approach to, or Receſs from the Sun, eſpecially if the Motion of both the Comet and Planet ſhould happen to be contrary, muſt be attended with Conſequences frightful beyond all Imagination. But it is highly probable, that even the near Approach of a Comet to the Earth would cauſe terrible Effects. Our Comfort is, that the whole Machine of Nature is in the Hands of one who knows how to conduct and manage all its vaſt and unwieldy Parts, and that the Motions of thoſe dreadful Bodies, though to ſuch puny Creatures as we are, they ſeem the more terrible the more we conſider them, are entirely under his Rule and Guidance, and that no one Part of Nature can break looſe upon, or bear down another, without his Permiſſion.

Some Comets have, by the Calculations of the beſt Aſtronomers, been ſuppoſed, at their greateſt Diſtance from the Sun, to recede no leſs than four Times as far from him as the Diſtance between the Sun and *Saturn*. Yet it is highly probable that Comets, even at that amazing Diſtance, do not approach ſo near any of the fixed Stars as to be affected by their Attraction, but return periodically and revolve round the Sun. Here is therefore, according to Probability, a Space, of which the Sun is the Centre, and in which the Planets and Comets move round him, conſiſting of a Number of Miles not under ſix or ſeven thouſand millions, and no one knows how much more, yet quite clear of the Attraction of all the fixed Stars around, which in all Probability reaches as far as that of the Sun, or about three or four thouſand millions of Miles every way round each Star. Whence we may ſuppoſe, no two fixed Stars in the Heavens to be nearer to one another than ſix thouſand millions of Miles, however near they ſeem at this Diſtance. But by the more accurate and improved Obſervations of the Moderns it is found, contrary to the Suppoſitions of former Aſtronomers, that the fixed Stars yield no ſenſible Parallax, and that, though we are no leſs than a whole Breadth of the Earth's annual Orbit, or 160 millions of Miles nearer ſome of them at one Time of the Year, than at the oppoſite, their Appearance, Magnitudes and Diſtances from one another are always the ſame. This ſhews that the above 160 millions of Miles bears no more Proportion to the Diſtance of the fixed Stars, than one Pace does to ten Miles. Upon this Theory they may be ſafely placed at no leſs than ten thouſand Times the Breadth of the Earth's annual Orbit from us. Their Diſtance then in Figures will be 1,600,000,000,000, which makes one Billion, or one thouſand Times one thouſand Millions, and ſix hundred thouſand millions of Miles. Farther, if we conſider the immenſe Diſtance of the fixed Stars, and conſequently, the Magnitude they muſt be of, to be viſible by us at this Diſtance, we can hardly ſuppoſe the Divine Wiſdom, which does nothing in vain, has created ſuch Numbers of luminous Bodies, of Magnitudes inconceivable, and at Diſtances almoſt infinite, for no other Purpoſe but to afford us a little glimmering Light in the Night, which could have been done more effectually, and with infinitely leſs Exertion of creating Power, by one ſingle additional Moon. For what Purpoſe then ſhall we ſuppoſe ſuch a Profuſion of ſtupendous Luminaries created? In all Probability, or rather without all Doubt, to enlighten innumerable Syſtems of Worlds, which revolve round them, in the ſame Manner as our Earth and the other Planets of our Syſtem revolve round the Sun. If therefore every one of the fixed Stars is a Sun, with its Syſtem of Planets revolving round it, it is highly probable, each of thoſe Syſtems takes up a Space nearly equal to what has been above ſhewn ours does: for why ſhould we ſuppoſe a greater Extent of Space given to our Syſtem than to any other, that is, a greater than is neceſſary? Now, as to the Number of theſe glorious Luminaries, the lateſt Catalogues of the fixed Stars amount to about three thouſand on all Sides of the Heavens, moſt of which are viſible to the naked Eye. But, if we have recourſe to Teleſcopes, the Number of the Stars becomes next to infinite: for according as we uſe more and more perfect Inſtruments, we diſcover greater and greater Numbers in almoſt every Conſtellation. In that of the *Pleiades* or ſeven Stars, good Teleſcopes diſcover three or fourſcore; in *Orion*, where the naked Eye does not diſcover above forty or fifty, thoſe Inſtruments ſhew two thouſand; in the Conſtellation *Perſeus* alone, there are more Stars to be ſeen with Teleſcopes, than with the naked Eye in the whole Heavens; and in the *Galaxy*, or milky Way, which encircles the whole

Concave of the Heavens, of the Breadth of ſeveral Degrees, it is probable the Number of Stars is immenſe, whoſe blended Light cauſes that remarkable Brightneſs in that Part of the Heavens, though their Diſtance is ſo great, that the ſingle Stars, of which it is compoſed, cannot be diſtinguiſhed. If, as is probable, the Stars of the firſt Magnitude (as they are commonly called) appear ſo large and bright only becauſe they are neareſt to us, and thoſe of the ſecond only appear dimmer becauſe they are as much farther beyond thoſe of the firſt Magnitude, as from hence to thoſe neareſt, and if thoſe of the third and fourth, and ſo on to the ſixth Degree of apparent Magnitude be ſtill in the ſame Manner diſtant from each other by Intervals equal to the Diſtance from hence to the neareſt fixed Stars; and if the Caſe of the teleſcopic Stars be the ſame, and if each of thoſe innumerable Millions and Myriads of Luminaries be in fact, as is highly probable, a glorious Sun, a ſtupendous World of Light and Heat, with its Syſtem of Planets, Moons and Comets going round it, and if all thoſe Planets and Moons be Worlds inhabited by various Orders of Beings, enjoying or preparing themſelves for ſuch Degrees of Happineſs as the Divine Wiſdom and Goodneſs has appointed for them; If this, I ſay, be a juſt Idea of the Univerſe (and ſurely no Idea we can frame is too grand for Omnipotence to produce) we have here a View of that Expanſe to which the Epithet VAST, is not improperly given in the foregoing Poem, and muſt own, that the Univerſe, conſidered in this Manner, is a Theatre truly fit for a God to diſplay his infinite Power, Wiſdom and Goodneſs. But after we have, by Computation, extended the created Univerſe to a Space containing the greateſt Number of Miles human Arithmetic can expreſs, what is that Space to Infinitude? It is even a Point, that bears no Proportion to the unbounded and unlimited Preſence of the Divine Nature. Were an angelic Being to take his Flight from this Part of the Univerſe, and to proceed in a direct Courſe with the Swiftneſs of Light, it is certain, that, ſhould he continue his Flight to all Eternity, he muſt ſtill find himſelf in the Centre of the Divine Preſence. So ſtrictly juſt, as well as inimitably ſublime, are thoſe Expreſſions of Scripture, "In "him we live, and move, and have our Being. There is "no flying from his Preſence. The Heavens, even the "Heaven of Heavens cannot contain him," *&c.*

I cannot help adding here, by way of Contraſt to the View we have been taking of the Divine Power in his great Works, a Word or two upon the Diſplay he has given of it in his minute ones, which are not leſs aſtoniſhing, nor leſs worthy of him.

That admirable Inſtrument the Microſcope * has opened to us of theſe latter Ages a World utterly unknown to the

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* There are very few Subſtances, in which the Microſcope does not ſhew ſomething curious and unexpected; but for the Sake of ſuch Readers as are unacquainte with that Inſtrument, I ſhall ſet down ſome of the moſt remarkably entertainin Objects, upon which actual Obſervations have been made.

1. The Globules of the Blood, which are computed to be almoſt a tw thouſandth Part of an Inch in Diameter, each conſiſting of ſix ſmall Globules, eac of which again probably conſiſts of ſix ſmaller, and ſo on. The Circulation of th Blood is to be ſeen very diſtinctly in the Tail of a ſmall Fiſh, the Web of the Foo of a Frog, &c. and the Globules to ſplit and divide, before they can enter th ſmalleſt Veſſels.

2. The Bones of all Creatures, ſliced extremely thin, afford an entertaining Objec for the Microſcope, conſiſting of innumerable Perforations, and Ramifications, diſpoſed in an endleſs Variety of Forms.

3. The Fleſh of all Land and Sea Animals dried, and cut into very thin Slices, gives a beautiful View of the various Fibres, and their Convolutions. The Brain, the ſpinal Marrow, and even the Hairs of Animals, exhibit different Curioſities.

4. The human Skin, by the Help of the Microſcope, is found to be cover over with an infinite Number of Scales lying over one another, as in fiſhes; and i is probably the ſame in other Animals. It has been computed that a Grain of San will cover two hundred of theſe Scales.

5. All Sorts of Feathers, eſpecially thoſe of the Peacock, afford a ſurpriſing Vie in the Microſcope. It is ſuppoſed that a ſingle Feather contains no leſs than Million of different Parts.

6. Flies are found by the Microſcope to be produced from Eggs laid by th Mothers, from whence they are hatched in the Form of Maggots, or ſmall Worm which are afterwards transformed into Aurelias, and theſe into perfect Flies. This the Proceſs moſt of the winged Inſects go through in their Production. They have a great Number of Eyes fixed to their Heads, ſo that they ſee on all Side around them, without turning their Heads or Eyes. A common Fly is ſuppoſed t have eight thouſand, and a grey drone Fly no leſs than fourteen thouſand Eye with a diſtinct optic Nerve to each; and each Eye appears through the Microſcope, though magnified many hundred thouſand Times, more exactly ſhaped, and more curiouſly poliſhed, than human Art could finiſh an Object as large as the whole Cluſter containing ſeven thouſand diſtinct ones. The Wings of Flies, eſpecially of th Moth and Butterfly Kind, are found to be contrived with admirable Art, to anſwe their Uſe, and with inimitable Beauty and Ornament. The Duſt, which ſtick to the Fingers, when we handle them, is found to be Feathers; each of which h its Quill and vane Parts as compleat as that of a Fowl or a Gooſe, and are inſerte in the Film of the Wing, with the utmoſt Regularity of Arrangement. With th Microſcope, the Stings of Moths and Bees appear to be Inſtruments finiſhed to th higheſt Perfection; their Points, and ſaw-like Teeth being perfectly poliſhed a ſharp; whereas the Edge of a Raſor appears like that of a Butcher's Cleaver, a the Point of a Lancet like an iron Spike juſt come from the Anvil.

7. By the Help of the Microſcope the innumerable and inconceivably minu Animalcules in various Fluids are diſcovered, of the Exiſtence of which we ha no Reaſon to ſuppoſe any Mortal had the leaſt Suſpicion, till laſt Century. In th Milt of a ſingle Cod-fiſh ten Times more living Creatures are contained, than th

Antients, who imagined, that the whole Race of Inſects were produced by Heat and Corruption, and had not the leaſt Suſpicion of any living Creature ſmaller than their naked Eyes could perceive. Whereas we find by the Help of that

inhabitants of *Europe*, *Aſia*, *Africa* and *America*, taking it for granted, that all
Parts of the World are as well peopled as *Holland*, which is very far from being the
Caſe. Of a certain Species ſome are diſcovered ſo extremely minute, that it has been
computed, three Millions of them, or three Times the Number of the Inhabitants
of *London* and *Weſtminſter*, would not equal the Bulk of a Grain of Sand. Of
Animalcules, ſome Species reſemble Tadpoles, Serpents or Eels, others are of a roundiſh
or oval Form, others of very curiouſly turned and various Shapes; but in general they
re extremely vigorous and lively, and almoſt conſtantly in Motion. Animalcules
re to be found (beſides thoſe in the Bodies of Animals) in the Infuſions of Pepper,
Senna, Pinks, Roſes, Jeſſamin, Tea, Raſberry Stalks, Fennel, Sage, Melons,
ſour Grapes, Wheat, Hay, Straw, and almoſt all vegetable Subſtances, in the
Water, that is in the Shells of Oyſters, Cockles, and other Shell-fiſh, in the Foulneſs
upon our Teeth, and thoſe of other Animals, in our Skins, when affected with cer-
ain Diſeaſes; in Vinegar, and Paſte, and ſo on infinitely. In each of theſe Sub-
ſtances, when expoſed to the Air ſome Time, Multitudes of living Creatures, be-
yond the Reach of Numbers, are diſcovered, of which many Hundreds of Species are
lready known, as different from one another as thoſe of the largeſt Animals, and
ery probably there are many more yet unknown. As it is certain, that in the
bove mentioned Fluids few or no Animalcules are to be found, when covered from
he Air, but when open to the Acceſs of the Air, their Numbers are beyond
eckoning; it is hardly to be doubted, but that either the Air is replete with infinite
Multitudes of living Creatures too ſmall for Sight, which come and depoſite their
Eggs in Places proper for the Nutrition of the Young, or that their Eggs are float-
g every where in the Air, and falling promiſcuouſly every where, only thoſe are
atched, or come to Perfection, which fall upon Places fitted for them, and the others
eriſh. However it is, the countleſs Numbers of thoſe living Creatures, the Profuſion
f Life every where to be obſerved, is above Meaſure aſtoniſhing, and ſhews the
Maker to be an infinite Being.

8. By the Help of the Microſcope, we find that the Scales of almoſt every dif-
rent Fiſh are different from thoſe of others, in internal Texture; and that all of
em are wrought with ſurpriſing Art and Beauty.

9. By Means of this noble Inſtrument we find, that the Seeds of almoſt all
Manner of Vegetables contain in them the Stamina of the future Plant or Tree,
d that their Production from the Seed, and their Growth to Maturity is only the
welling and Enlarging of the Stamina by the Addition of nutritious Juices. It is
obable the Manner of Production and Growth of Animals is analogous to this.
he Fertility of ſome Plants is almoſt beyond Belief. One particularly is ſaid by
aturaliſts to produce annually a Million of Seeds from one. The Farina of
owers is found by the Help of the Microſcope to be a regular organized Body,
d not a meer Duſt, as it appears to the naked Eye, and is reaſonably ſuppoſed to
neceſſary to Fertility in Plants and Trees.

10. By the Microſcope have been diſcovered many ſingular Properties of that
oſt unaccountable of all Creatures the Polype, which is found at the Bottom of
itches, and ſtanding Waters; whoſe Manner of Production, Feeding, and Digeſ-
n, are different from thoſe of all other Animals. The young ones come out
the Sides of the old, like Buds and Branches from Trees, and at length drop off
rfect Polypes. They do not ſeem to be of different Sexes. They take in
orms, and other Suſtenance, by Means of a Set of long Arms or *Antennæ*, which
round their Mouths, and after keeping them ſome Time in their Stomachs,
ow them out again the ſame way. The Animal's Body conſiſts of a ſingle
vity, like a Tube or Gut, and what is wonderful, and almoſt beyond Belief, is,

noble Inſtrument (which is ſufficient alone to furniſh inexhauſtible Variety of Entertainment) that the ſmalleſt Animalcule, as well as the largeſt Beaſt of the Field, is produce by Parent-animals, and that the different Species or Kinds of living Creatures, whoſe Minuteneſs renders them imperceptible to our naked Eyes, are as numerous as thoſe which are viſible to our naked Eyes. By this Inſtrument we find, that the complex and various Apparatus neceſſary to Life can be crouded into a Point; that an organized Body may be put together, whoſe Size is not equal to an Atom; nay, that there are innumerable Species of Animalcules, which, when magnified a Million of Times, are ſtill hardly diſcernible; that a few Drops of ſome Fluids contain more living Creatures than there are Men, Women, and Children now alive upon the Face of the whole Earth. By the Help of this Inſtrument we find, that the ſame Hand, which with ſuch wonderful Accuracy poiſed and ballanced the Magnitudes, Diſtances and Velocities of thoſe immenſe Bodies the Planets and Comets, has likewiſe faſhioned the inconceivably minute Bodies of Animalcules with ſuch Eleganc

that it will live and feed after it is turned Inſide out, and even when cut into a great many Pieces, each ſeveral Piece becomes a compleat Polype. They are Infe with a Kind of Vermin, as are almoſt all Animals from the largeſt down to B and other Inſects. Theſe Vermin ſometimes in a long Time will eat up the H and Part of the Body of a Polype, after which, if it be cleared of them, it have the devoured Parts grow up again, and become as compleat as ever. So Polypes have around their Mouths a ſort of Plume, which they whirl round, a making with it an Eddy in the Water, draw in their Prey, and devour it.

11. By the Microſcope it is found, that neither the Wood, the Bark, the Ro the Leaves, the Fruit, nor even the Pith of the meaneſt Vegetable is a Maſs Crude or indigeſted Matter; but that every different Species is different in its inte nal Structure, and all curiouſly and delicately wrought. A Bit of Cork, cut e tremely thin, a Slice of Oak or Fir, or a Bit of Elder Pith, in the Microſcope, ſo many curious Pieces of *Moſaic* Work. Even a Bit of Charcoal or burnt W appears with the Microſcope an admirable Object.

12. By this Inſtrument it is found, that what we call Mouldineſs upon Fl Leather, or other Subſtances is no other than a great Number of extremely ſm but perfect Plants, having Stalks and Tops like Muſhrooms, and ſometimes an A pearance of Leaves. The Seeds of theſe minute Plants muſt, in all Probability, diffuſed univerſally through the Air, and falling upon Subſtances fit for their Grow ſpring up in aſtoniſhing Profuſion. There is, in ſhort, no End of microſc Objects. A Sprig of Moſs, with the Help of that Inſtrument, is found to b regular Plant, conſiſting of a Root, a Stock, Branches, Leaves, &c. and Natu liſts tell us, there are ſome Hundreds of different Species of it. A Bit of Sp before the Microſcope is a curious Piece of Net-work. Every different che Salt has its Parts differently figured. A Leaf of a common ſtinging Nettle, Beard of a wild Oat, the Surfaces of ſome Pebble-ſtones, a Flake of Snow, a Grains of Sand, or almoſt any natural Thing, with this Inſtrument, exhibit ex ſite Beauties; while, on the contrary, the moſt delicate Works of Art, can Means bear its Examination; but degenerate before it into Maſſes of Irregular and Deformity.

and Beauty, that the more they are magnified, and the farther they are examined, the more curious they are found to be; whereas on the Contrary, the moſt exquiſite Works of human Art owe their Beauty to the Imperfection of our Sight, ſo that the fineſt Needle with the Microſcope looks like a Plowſhare, a Piece of Silk like a Mat, and the moſt delicate miniature Picture like a rough-caſt Wall. The Obſervation of the Wonders of creating Power in theſe minute Objects, ſhews us, that He, who inhabits Immenſity and Eternity, is abſolute Maſter of every Point of Space, and of every Particle of Matter in the Univerſe, and pervades, actuates and invigorates all, exhibiting in an imperceptible Point, as well as in an unbounded Sphere, the Perfections and Attributes of an infinite God.

Thus great, thus good, thus wiſe, and thus powerful, or rather infinitely more great, more wiſe, more benevolent, and more powerful than all created Imagination can conceive, is He, whom we ought to adore, to obey, to love, and to reverence with the beſt Powers and nobleſt Faculties of our Souls, and before whom all the mighty Potentates of Heaven veil their Glories, and worſhip at his Footſtool. After what has been ſaid, in order to ſet forth ſomething of the Divine Attributes of Goodneſs, Wiſdom, and Power, we muſt own that theſe are only a Part, and a very ſmall Part of his Ways; the above not being the hundredth Part of what is known of the Greatneſs and Excellency of the Works of God; and what is known of them, being juſt Nothing, when compared to what is beyond the Reach of human Underſtanding. But if, as we have ſeen, the Creator of the World has ſhewn himſelf ſo immenſely kind and beneficent, as unaſked, and without the leaſt Proſpect of Advantage, or Addition to his own Happineſs, to produce an infinite Number of Creatures, with an infinite Number of Conveniences and Advantages for their Happineſs, can we find in our Hearts to offend ſo much Goodneſs, to requite ſo much Kindneſs with Rebellion, and Diſobedience? Eſpecially, can we carry our Perverſeneſs againſt the beſt of Beings ſo far, as to neglect, or break through thoſe very Laws he has condeſcended to give us purely for our own Advantage, for ennobling our Natures, and improving us in thoſe Virtues and Graces, which are abſolutely neceſſary in their own Nature to render us capable of Happineſs. And, if the infinite Majeſty of Heaven has condeſcended to provide for the meaneſt of his Creatures, and has not thought any of them unworthy of his Care, what Pretence have we, who are ourſelves but Duſt and Aſhes, to treat with Neglect, or look with Contempt upon any of our Fellow-creatures, however a few accidental Circumſtances may ſet them at a little Diſtance from us in this World? Or how can we juſtify ourſelves in refuſing any Kindneſs in our Power to our own Fleſh and Blood, when we ſee ſuch Inſtances of the Divine Goodneſs to the very loweſt of his Creatures?

Again, have we ſeen a few out of innumerable Inſtances of the moſt conſummate Wiſdom of the ſupreme Being in his Works of Creation? That every the minuteſt Part is wiſely contrived to anſwer its proper End, and even various and ſeemingly contrary Ends at the ſame time, and to become an uſeful Member of the immenſe Whole? Have we ſeen Reaſon, from the ſlight View we have taken of the Divine Works, to conclude the great Author to be wiſe above all finite Conception; and ſhall we be ſo weak as to dream of impoſing upon him, or evading his all-ſeeing Eye, and all-comprehenſive Knowledge? Can any Imagination be more vain or more deſperate, than for a weak, ſhort-ſighted Mortal to think of outwitting infinite Wiſdom? For a Creature, who is but of Yeſterday, to imagine it poſſible to get the better of his Creator, who ſees at one View all Things, paſt, preſent, and to come? Or can we be ſo fooliſh as to imagine, that he, who could ſo wiſely contrive and execute the grand Deſign of an Univerſe, has laid his Schemes for the Government of the Moral World (for the Sake of which he created the Natural) ſo ill, as to ſuffer the Diſobedient and Impenitent to eſcape finally unpuniſhed?

Farther, have we conſidered a little the amazing Effects of the Divine Power in the Motions of thoſe ſtupendous Bodies the Planets and Comets, which, conſidering their huge Unwieldineſs, that they ſhould be moved with ſuch Velocity, as ſome of them revolve with, if we are not aſtoniſhed and ſtartled at the Thought of it, it is either becauſe we have not duly conſidered it, or becauſe we have no adequate Ideas of it. And can we think of reſiſting or eſcaping ſuch Power? What ſhould we be in the Hands of One, who can wield thoſe mighty Maſſes of Matter? Or rather, what is all human and angelic Power together againſt Omnipotence? Juſtly therefore does our Saviour direct us not to fear weak Man, who can at worſt, but kill the Body; but to fear Him, who can finally deſtroy both Soul and Body in Hell. Not to fear him, who thunders in the Heavens above us, who ſhakes the Earth under us *, who weighs the Mountains in Scales, and the Hills in a Ballance; not to dread the Power, or to hope to avoid the Reach of that Arm, which launches hoſe prodigious Bodies with ſuch Rapidity through the Sky; f this is not the very Deſperation of Madneſs, nothing is.

Finally, have we ſeen that the Creator and Governor of he World, who inhabits Immenſity and Eternity, is infinitely ood, wiſe, and powerful? And do we know certain and nfallible Ways of gaining the Approbation and Friendſhip of uch a Being? Do we know how to attain the Happineſs of aving all this Wiſdom, Goodneſs, and Power exerted for s? Do we know, that they, for whom infinite Wiſdom, Goodneſs, and Power are intereſted, muſt be happy beyond ll Imagination? Are we certain, that the righteous Judge f the World will not be finally indifferent to any of his Creatures;

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* As we have, ſome Weeks ago, felt the Effects of Divine Power in a Shock an Earthquake, and again another this very Morning, *March* the 8th, a few ours before my writing this; and as we have Reaſon to be thankful, theſe fearful hænomena very ſeldom alarm us of this Part of the World; it may not be niſs to preſent ſuch Readers as are not acquainted with that Part of Natural Philoſophy, with the following very brief Account of their ſuppoſed Cauſes, *&c.*

The Earth abounding univerſally with Caverns and ſubterraneous Paſſages, and Bowels being filled with great Quantities of inflammable Matter, it is no Wonr, though their taking fire, and ſuddenly rarifying the Air and Vapours, that are nt up in thoſe unſeen Regions, produces the ſame Effects as Gun-powder in a ine. There are ſeveral Sorts of Subſtances, which while ſeparate, are cool and aceable, but being put together, break out, ſome inſtantly, ſome more ſlowly, into noke, Fire, and Flame. An Imitation of an Earthquake may be made by burying under Ground a Quantity of a Paſte made of Sulphur and Steel Filings, which in few Hours will ſwell, and heave up the Ground, and at laſt break out into Smoke d Flame. Volcano's, or burning Mountains, are generally found in thoſe Parts the World, which are ſubject to Earthquakes, being the Vents, or Spiracles of e inflammable Matter, which cauſes them; of which ſuch Quantities have been rown out of Mount *Ætna*, and others, as is aſtoniſhing to think of. Some of e moſt terrible Earthquakes have been that in *Sicily* in the Year 1692-3, which ſtroyed or greatly damaged fifty-four Cities and Towns, beſides a great Number of illages, particularly the City of *Catanea*, in which, of 18,914 Inhabitants 18,000 ere ſwept to one Grave in a Moment, and never more ſeen. In the whole Iſland, out 60,000 of 244,900 People periſhed. In *Jamaica*, where they are very quent, a moſt fearful one happened in the Year 1692, which in two Minutes allowed up nine Tenths of the Town of *Port Royal*. The Earth opening ſwalwed People up in Crowds, ſome of whom were thrown up in other Places, ſome re ſqueezed to Death by the cloſing Earth, with their Heads left above Ground. me whole Plantations were removed a great way from their Places. Ships in the rbour were overſet and loſt. The Earth rolled like Waves of the Sea; and at Openings whole Rivers of Water ſpouted up. The whole was attended with ible Noiſes, as of falling Mountains at a Diſtance, and with an unſufferable nch, and the Vapours which broke out, darkned the very Air. Mountains were hed out of their Places, and the Courſe of Rivers ſtopped by them. Almoſt all Houſes in the Iſland were thrown down, and a thouſand Acres of Land ſunk right. At *Lima* 5000 People periſhed in an Earthquake in 1687; and there e been alſo ſome terrible ones in *New England*, and other Places too tedious to ntion.

[illegible] but this, as, on the one hand, thoſe [illegible] ment to his wiſe and righteous Laws, and ſincerely endea in ſpite of all Oppoſition, to gain his Approbation, the Goodneſs, the Wiſdom, and the Power of a Go for their Happineſs, ſo on the other, they, who [illegible] nally diſobedient and impenitent, muſt expect the Div Power and Wiſdom to be armed againſt them, and even Goodneſs itſelf to be kindled into Wrath for their Deſtr tion; are we, I ſay, as ſure of all this as Reaſon and Reve lation both can make us, and ſhall we be ſo blind to o own Intereſt, as to let any Conſideration of either Hope Fear of any Thing in this World lead us to the Neglect Violation of our Duty, or withdraw our Attention fro the great End of our Being, our future and final Happineſs Whatever others do, let us of this enlightned Nation reſolv after the Example of the pious Hero of Scripture, that we a our Houſes will ſerve the Lord; ſince it will ever be fou the higheſt Wiſdom, and the higheſt Honour as well as indiſpenſible Duty of all created Beings, with the faith Seraph *Abdiel*, "to ſerve God ever bleſt, and his Divi "Beheſts obey, worthieſt to be obeyed."

F I N I S.